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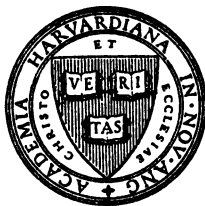
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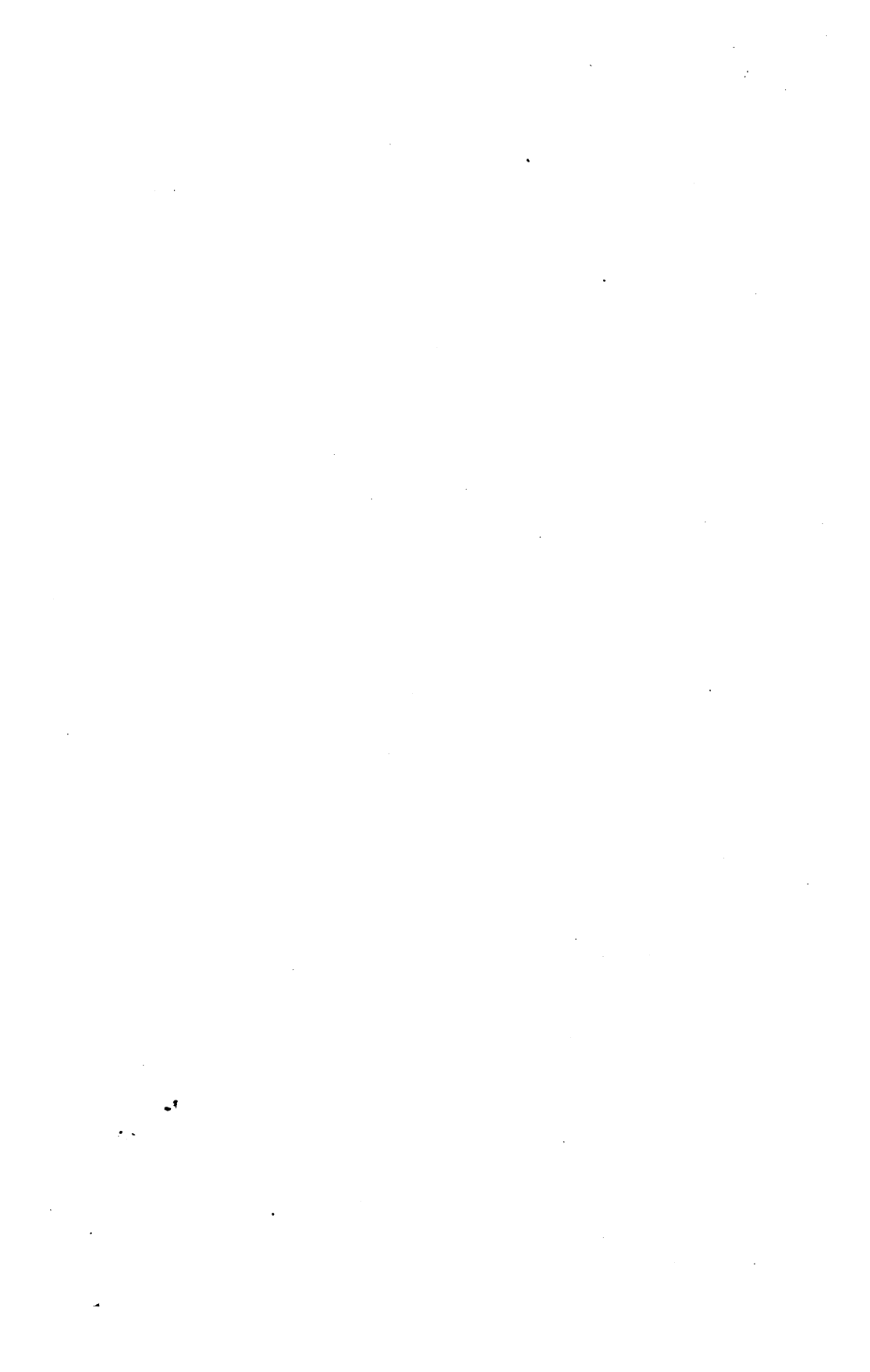
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CIRCULARS OF INFORMATION
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No. 1-1885.

CITY SCHOOL SYSTEMS IN THE UNITED STATES;
BY JOHN D. PHILBRICK, LL. D.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1885.

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CONTENTS.

Letter of the Commissioner of Education to the Secretary of the Interior.....	Page. 5
--	--------------------

CITY SCHOOL SYSTEMS IN THE UNITED STATES.

Introduction—design and scope of the report	7
The importance of the subject	9
Statistical summary of the number and population of cities	11
Administration	14
Organization of instruction	19
High schools	22
Evening schools	32
Elementary evening schools	33
Evening high schools	35
Evening technical schools	37
Evening drawing schools	38
Normal schools	41
The Kindergarten	47
Studies	50
Supervision	52
Programs	59
Supplementary reading	67
Industrial education	69
Handicraft as a branch of public instruction	71
What ought to be done for industrial education by city systems of public in- struction	87
Sewing	89
Gymnastics	99
Fire drill	101
Military drill	102
Gratuitous instruction	103
Free text books and stationery	105
Economy	106
Tenure of office of teachers	110
Examining and certificating of teachers	118
Preponderance of female teachers	127
Examination of schools	131
Promotions	142
Exhibitions	147
Recess and no recess	150
Age in schooling	153
Insufficiency of accommodations	154

	Page.
School-houses	156
Boston high school buildings	166
City of London School	168
Washington High School	171
Requirements of the model school room	171
General requirements of school-houses	172
Some peculiar characteristics of foreign school-houses	176
School museums	177
Decoration of school rooms and art for schools	178
Pedagogical libraries	182
Provisions for coercive school attendance	185
Reports and statistics	188

APPENDIXES.

Appendix A.—Program of the Polytechnic Association (France)	195
Appendix B.—Course of study of St. Louis Normal School	197
Course of study of Boston Normal School	198
Appendix C.—Questions for examination of the first class in the Boston grammar schools, 1845	199
Appendix D.—Plan of second annual industrial exhibit of the Moline (Ill.) public schools	203
Appendix E.—List of decorations of the assembly hall of the girls' high school, Boston	206

LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., January 17, 1885.

SIR: It is frequently remarked by students of political history that some of the greatest defects of our form of government are developed in connection with municipal administration. Fortunately, in spite of this fact, some of the best school work in our country is found in the cities.

This is due very much to the comparatively early separation of school administration from other municipal business. In general the theory of this municipal educational administration has embraced a board of education, vested by the laws of the State with ample powers, selected from among the people of the city, so that the actual sentiments of the community shall be faithfully represented in the administration of the schools. The members of these boards generally perform their task gratuitously and have now well-nigh universally adopted the practice of committing the execution of their orders to one or more persons known as superintendents and assistants, who, by their abilities, attainments, and experience, are specially fitted for this supervisory work. Fortunately, some of the most eminent men of the land have given their most faithful service freely as members of boards of education, and it is a matter for still further gratitude and congratulation that some of the most eminent educators of the land or world have been engaged as superintendents of instruction of our cities.

Among the most prominent of these, earliest in the field, was John D. Philbrick, LL. D., who became the superintendent of Boston schools January 10, 1857, having previously been a teacher in those schools, principal of the Connecticut State Normal School, and superintendent of public instruction for that State. It is acknowledged the world over that to him is largely and specially due the excellence of the Boston schools. A thorough man of affairs, accurate and broad in his scholarship, in the fullest sympathy with American institutions and ideas, he not only watched and guided the Boston schools that grew under his hands for twenty years, but, by travels and studies in different parts of this country and during two visits to Europe, one of which included official duties in connection with the exhibition at Vienna and the other the special organization, care, and management of the American exhi-

bition of education in Paris in 1878, he had the rarest opportunities for extensive personal observation elsewhere in school matters and for philosophical deduction therefrom. In his retirement and with his accumulations of literature, of observation, and of experience around him, in spite of a progressive disease of the eye that threatens complete blindness, he has consented at my request to prepare the following report on education in cities, which I hereby recommend for publication. Every one will see that, to secure the fullest benefit to the millions interested in the administration of education in our cities and the millions yet unborn to be affected by it, the writer of this report, possessed of rare qualifications for the undertaking, should be accorded the largest freedom in bringing out his philosophical conclusions, whether they agree or not with the opinions formed in this Office; and I may add that I know of no more valuable study of city systems of public instruction than that presented in the following pages.

I have the honor to be, very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication approved.

H. M. TELLER,
Secretary.

CITY SCHOOL SYSTEMS IN THE UNITED STATES.

INTRODUCTION—DESIGN AND SCOPE OF THE REPORT.

An eminent pedagogue and savant¹ of France finds one of the principal causes of the supremacy of Germany in the matter of popular education, in the exceptional division of the nation into so many independent sovranities. A sort of emulation was created among them, and thus the improvements realized at any one point were gradually adopted by the entire nation. The same emulation continues to this day. In like manner an emulation has been created among our cities which has greatly promoted educational progress; a constant comparison is kept up by interchanges of visits and reports, and especially by the publications of the National Bureau of Education, the result of this comparison being to hasten the elimination of faults and the adoption of improvements of every description.

The object of this report is to strengthen this tendency to uniformity of excellence by a general survey, historical, critical, and comparative, of certain features and characteristics of our city systems of schools, more especially those features and characteristics in which there is found the greatest diversity in respect to progress towards the ideal standard.

Comparison through historical criticism is the method of educational progress, and this is the method which it is proposed to follow in the present review. The aim is to set forth, so far as practicable within the assigned limits, such facts, figures, and opinions as may best enable each city to profit by improvements realized by other cities. It is not intended, however, to limit our observation to the systems of our own country. The educational experience of the civilized world is common property, and, while there is no danger of overrating the value and importance of home comparison, international comparison as illustrated in universal expositions is, perhaps, still more fruitful in good results. What the scientific educator needs to know is this, namely, the best things that have been thought and done relating to the matters in which he is concerned; not merely the best things that have been thought and done in his own neighborhood and in his own State, but in foreign countries as well, and especially in those countries which hold the first rank in civilization. The objector who tells us that the educational experience and opinion of foreign countries are valueless to us because of the divergence between their civilizations and ours, betrays his ignorance and reveals his incompetency for educational

¹ Michel Bréal, member of the "Institut," in the *Dictionnaire de pédagogie*.

direction. Modern civilization is rapidly tending to uniformity and unity. Each nation is hastening more and more to adopt the inventions and improvements of all the others.

The educational element of civilization forms no exception to this general drift of things. Methods of teaching have nothing to do with national boundaries. The best is the best everywhere. The essential elements of a good school system are the same in every country. There is only one best way of securing and retaining efficient teachers. A model primary school in Paris, with its appurtenances, apparatus, fittings, and program, would be no less a model primary school in Washington. If Germany has worked out the model school room, all nations must copy it. If America devises the best school desk, it must go to the ends of the civilized world. Prussia institutes the normal school; every other nation adopts it. The really good local thing, the outgrowth of educational laws, that stands the test of experiment, in time becomes general. In the mean time innumerable whims, fancies, and strange vagaries claim attention for a longer or shorter period, then disappear, leaving no beneficial trace; hence, reference to foreign examples becomes indispensable to our purpose.

Urban and rural schools are not and cannot be, and perhaps need not be, the same in all respects. In the large city and the small village or rural district the conditions of life in general and of school life in particular are not the same; that which is easy in the one is difficult in the other; certain results which suffice in the one, suffice not in the other. The rural district, more favorable in some respects, in others is less favorable than the city, and in some cases the figures in the statistical exhibits of city and rural systems are not easily harmonized. In the country there is a high degree of equality in the social condition of the inhabitants. In the city we find the extremes of wealth and poverty: in one quarter we find tenement houses crowded with human beings whose earnings afford only the means of a bare subsistence, while another quarter is composed of princely dwellings filled with every luxury that wealth can buy. In the city the financial resources easily afford the means of supporting schools the year round, while the sessions of rural schools will perhaps scarcely average six months. The pupils in the city are almost universally destined to industrial or commercial pursuits, while in the country they are destined to the cultivation of the soil. In the country the pupils acquire, during the school period, habits of industry and labor; in the city they have little opportunity to become accustomed to manual labor. In the city organization specialization is the characteristic most prominent; in that of the rural district, on the other hand, the principal characteristic is the absence of specialization. The city system has different grades of schools; the rural has not. The former assigns to each teacher pupils of nearly the same age and advancement and, to a certain extent, those

only of one sex ; the latter requires the teacher to govern and instruct pupils of all ages and both sexes. The cities draw to themselves the highest grade of teaching talent, and over the work of these teachers superintendents exercise a far more effective supervision than is enjoyed by country schools. These and other points of difference between the conditions incident to city and country schools make the administration of the former a different thing from that of the latter ; hence it is evident that an advantage may be gained by a separate treatment of the characteristics and problems of city systems as herein proposed.

The reporter wishes it to be distinctly understood *that he does not here attempt to present a complete statement of the organization, workings, or results of the city systems.* The scope of the report is much more restricted, its aim being limited mainly to the consideration of peculiar excellences and defects which are local, for the most part, or sectional, with a view to the promoting of the generalization of the former and the elimination of the latter.

THE IMPORTANCE OF THE SUBJECT.

In order to appreciate the extent and importance of our city systems of public instruction, it is necessary to consider the magnitude and growth, both absolute and relative, of the urban population of the country. The information for this purpose is contained in the following summary, taken from the Compendium of the Tenth Census:

Date.	Population of United States.	No. of cities.	Population of cities.	Inhabitants of cities in each 100 of the total population.
1790.....	3,929,214	6	131,472	3.3
1800.....	5,308,483	6	210,873	3.9
1810.....	7,239,881	11	356,920	4.9
1820.....	9,633,822	13	476,135	4.9
1830.....	12,866,020	26	864,509	6.7
1840.....	17,069,453	44	1,453,994	8.5
1850.....	23,191,876	85	2,897,586	12.5
1860.....	31,443,321	141	5,072,256	16.1
1870.....	38,558,371	226	8,071,875	20.9
1880.....	50,155,783	286	11,318,547	22.5

By "cities" is here meant municipalities, whether with town or city organization, containing a population of 8,000 and upwards. Of these cities, we find that there was in 1880 the enormous number of 286, containing an aggregate population of 11,318,547, or 22½ per cent. of the entire population of the country ; and it is safe to say that at the present moment the ratio of the urban to the whole population has reached twenty-five to one hundred, or one to four. But the fact of growth, both absolute and relative, is, if possible, still more striking. If we go back only fifty years, we find that there were only twenty-six cities, or less

than one-tenth of the present number; and that these cities contained only 864,509 inhabitants, or little more than one-thirteenth of the present urban population. Such has been the growth of our cities. But this growth appears even more remarkable when viewed in relation to the growth of the whole population. Fifty years ago the urban population was about one-sixteenth of the entire population; now, as already stated, it is not less than one to four, the ratio having increased fully fourfold.

The application of science to productive industry and the use of steam as a motor have made this astonishing growth of urban population possible. By the continued operation of these agencies, the proportion of city population will no doubt be still more largely increased in the future. This enormous increase of cities is likely to continue indefinitely. Science cannot predict its limits.

Statistics are not available to exhibit with completeness the growth and actual development of the provisions and results of the public school systems of our cities; but the full and comprehensive statistics of city systems published in the reports of the United States Commissioner of Education, as furnished voluntarily by school officials, afford sufficient data for a tolerably accurate estimate of the colossal proportions of this educational agency. This statistical exhibit comprises 263 cities and towns containing a population of 7,500 and upwards, of which the total number is 310.

The total annual expenditure for school purposes in 259 of these cities (the number reporting this item) amounted in 1882 to the sum of \$27,894,427.

The total *legal* school population in the 239 cities that reported this item amounted to 2,859,287, the actual school population (that is, the number of children of the usual age of school attendance, estimated to be 23 per cent. of the total population, the basis of estimation adopted by the Commissioner) being 2,079,188.

The estimated real value of property used for school purposes in the 240 cities reporting this item amounted to \$94,294,153.

The total enrolment in 263 cities amounted to 1,821,773.

The average daily attendance in 253 cities, the number reporting this item, was 1,204,763.

Moreover, in estimating the importance of our city systems of schools, it is necessary to remember that the influence of cities in determining the general welfare is out of all proportion beyond the numbers of their population. They are the centres of wealth, culture, science, business enterprise, and social and political influence. The role of cities is, no doubt, to become in the future far more important, relatively, than it is now. Hence, it is in our cities that all the power of education is needed.¹ The future of our cities will be largely what education makes

¹ C'est dans le gouvernement républicain que l'on a besoin de toute la puissance de l'éducation.— MONTESQUIEU.

it and the future of our country will be largely what the cities make it. What but education is to settle the question how far self government is to be practicable in our populous cities? And in this connection it must not be forgotten that the schooling of the vast majority of the youthful portion of our urban population is afforded by the city systems of public instruction.

STATISTICAL SUMMARY OF THE NUMBER AND POPULATION OF CITIES.

Table showing the number of towns and cities containing a population of 4,000, 7,500, 8,000 and upwards, respectively, in each of the States and Territories.

States and Territories.	4,000 and up- wards.	7,500 and up- wards.	8,000 and up- wards.	States and Territories.	4,000 and up- wards.	7,500 and up- wards.	8,000 and up- wards.
Alabama	4	3	2	Nevada	4	1	1
Arkansas	1	1	1	New Hampshire.....	9	5	5
California.....	10	6	6	New Jersey	28	13	12
Colorado.....	4	2	2	New York.....	59	34	34
Connecticut.....	33	14	13	North Carolina.....	4	2	2
Delaware.....	1	1	1	Ohio	46	22	20
Florida	3	2	1	Oregon	1	1	1
Georgia.....	6	5	5	Pennsylvania.....	56	29	28
Illinois	37	22	18	Rhode Island.....	16	6	6
Indiana.....	27	12	11	South Carolina.....	3	2	2
Iowa.....	19	10	10	Tennessee.....	5	4	4
Kansas.....	10	4	4	Texas	11	5	5
Kentucky.....	11	5	5	Vermont.....	7	2	2
Louisiana.....	3	2	2	Virginia.....	11	7	6
Maine.....	19	8	6	West Virginia.....	4	1	1
Maryland.....	5	3	3	Wisconsin.....	20	10	9
Massachusetts.....	85	39	37	Arizona.....	1		
Michigan.....	26	12	11	New Mexico.....	1		
Minnesota.....	8	4	4	Utah	2	1	1
Mississippi.....	4	1	1	District of Columbia...	2	2	2
Missouri.....	14	5	5				
Nebraska.....	4	2	2	Total	624	310	291

Alphabetical list of cities and towns of the United States containing a population of 7,500 and upwards, divided into five classes, according to population.

[Cities of the first class: Population, 200,000 and upwards.]

Baltimore, Md.....	332, 313	Cincinnati, Ohio.....	255, 139	Philadelphia, Pa.....	847, 170
Boston, Mass.....	362, 839	New Orleans, La.....	216, 090	San Francisco, Cal....	233, 959
Brooklyn, N. Y.....	566, 663	New York, N. Y.....	1, 206, 299	St. Louis, Mo.....	350, 518
Chicago, Ill.....	503, 185				

[Cities of the second class: Population, 100,000 to 200,000.]

Buffalo, N. Y.....	155, 134	Louisville, Ky.....	123, 758	Pittsburgh, Pa.....	156, 389
Cleveland, Ohio.....	160, 146	Milwaukee, Wis.....	115, 587	Providence, R. I.....	104, 857
Detroit, Mich.....	116, 340	Newark, N. J.....	136, 508	Washington, D. C.....	147, 293
Jersey City, N. J....	120, 722				

Alphabetical list of cities and towns of the United States containing a population of 7,500 and upwards, divided into five classes, according to population—Continued.

[Cities of the third class : Population, 50,000 to 100,000.]

Albany, N. Y	90, 758	Kansas City, Mo	55, 785	Rochester, N. Y	89, 366
Allegheny, Pa	78, 682	Lowell, Mass	59, 475	Syracuse, N. Y	51, 792
Cambridge, Mass	52, 669	New Haven, Conn	62, 882	Toledo, Ohio	50, 187
Columbus, Ohio	51, 647	Paterson, N. J	51, 031	Troy, N. Y	56, 747
Indianapolis, Ind	75, 056	Richmond, Va	63, 600	Worcester, Mass	58, 291

[Cities of the fourth class : Population, 25,000 to 50,000.]

Atlanta, Ga.	37, 409	Hartford, Conn	42, 015	Portland, Me	33, 810
Bridgeport, Conn	27, 643	Hoboken, N. J	30, 999	Quincy, Ill	27, 268
Camden, N. J	41, 659	Lancaster, Pa	25, 769	Reading, Pa	43, 278
Charleston, S. C	49, 984	Lawrence, Mass	39, 151	Salem, Mass	27, 563
Covington, Ky	29, 720	Lynn, Mass	38, 274	Savannah, Ga	30, 709
Dayton, Ohio	38, 678	Manchester, N. H	32, 630	Scranton, Pa	45, 850
Denver, Colo	35, 629	Memphis, Tenn	33, 592	Springfield, Mass	33, 340
Elizabeth, N. J	28, 229	Minneapolis, Minn	46, 887	St. Joseph, Mo	32, 431
Erie, Pa	27, 737	Mobile, Ala	29, 132	St. Paul, Minn	41, 473
Evansville, Ind	29, 280	Nashville, Tenn	43, 350	Terre Haute, Ind	26, 042
Fall River, Mass	48, 961	New Bedford, Mass	26, 845	Trenton, N. J	29, 910
Fort Wayne, Ind	26, 880	Oakland, Cal	34, 555	Utica, N. Y	33, 914
Grand Rapids, Mich	32, 016	Omaha, Nebr	30, 518	Wheeling, W. Va	30, 737
Harrisburg, Pa	30, 762	Peoria, Ill	29, 259		

[Cities of the fifth class : Population, 7,500 to 25,000.]

Adrian, Mich	7, 849	Bradford, Pa	9, 197	Danville, Pa	8, 346
Akron, Ohio	16, 152	Bridgeport, N. J	8, 722	Davenport, Iowa	21, 831
Alexandria, Va	13, 659	Brockton, Mass	13, 608	Decatur, Ill	9, 547
Allentown, Pa	18, 063	Brookline, Mass	8, 057	Derby, Conn	11, 650
Alton, Ill	8, 975	Burlington, Iowa	19, 450	Des Moines, Iowa	22, 408
Altoona, Pa	19, 710	Burlington, Vt	11, 365	Dover, N. H	11, 687
Amsterdam, N. Y	9, 466	Cairo, Ill	9, 011	Dubuque, Iowa	22, 254
Ann Arbor, Mich	8, 061	Canton, Ohio	12, 258	Easton, Pa	11, 924
Appleton, Wis	8, 005	Carbondale, Pa	7, 714	East Saginaw, Mich	19, 016
Atchison, Kans	15, 105	Cedar Rapids, Iowa	10, 104	East St. Louis, Ill	9, 185
Attleboro', Mass	11, 111	Chattanooga, Tenn	12, 892	Eau Claire, Wis	10, 119
Auburn, Me	9, 555	Chelsea, Mass	21, 732	Edgewater, N. J	8, 044
Auburn, N. Y	21, 924	Chester, Pa	14, 997	Elgin, Ill	8, 787
Augusta, Ga	21, 891	Chicopee, Mass	11, 286	Elmira, N. Y	20, 541
Augusta, Me	8, 665	Chillicothe, Ohio	10, 938	Fitchburg, Mass	12, 429
Aurora, Ill	11, 873	Clinton, Iowa	9, 042	Flint, Mich	8, 409
Austin, Tex	11, 013	Clinton, Mass	8, 029	Fond du Lac, Wis	13, 094
Bangor, Me	16, 856	Columbia, Pa	8, 312	Frederick, Md	8, 659
Bath, Me	7, 874	Columbia, S. C	10, 636	Fremont, Ohio	8, 446
Bay City, Mich	20, 693	Columbus, Ga	10, 123	Freeport, Ill	8, 516
Bayonne, N. J	9, 372	Cohoes, N. Y	19, 416	Galesburg, Ill	11, 437
Bellaire, Ohio	8, 025	Concord, N. H	13, 843	Galveston, Tex	22, 248
Belleville, Ill	10, 683	Concord Bluffs, Iowa	18, 063	Georgetown, D. C	12, 578
Beverly, Mass	8, 456	Cumberland, Md	10, 693	Gloucester, Mass	19, 329
Biddeford, Me	12, 651	Dallas, Tex	10, 358	Greenwich, Conn	7, 892
Binghamton, N. Y	17, 317	Danbury, Conn	11, 666	Hamilton, Ohio	12, 122
Bloomington, Ill	17, 180	Danville, Ill	7, 733	Hannibal, Mo	11, 074

Alphabetical list of cities and towns of the United States containing a population of 7,500 and upwards, divided into five classes, according to population—Continued.

[Cities of the fifth class: Population, 7,500 to 25,000—Continued.]

Haverhill, Mass.....	18,742	Moline, Ill.....	7,800	Rockland, Me.....	7,599
Holyoke, Mass.....	21,915	Millville, N. J.....	7,660	Rome, N. Y.....	12,194
Hornellsville, N. Y..	8,195	Muscatine, Iowa.....	8,295	Rutland, Vt.....	12,149
Houston, Tex.....	16,513	Montgomery, Ala.....	16,713	Sacramento, Cal.....	21,420
Hudson, N. Y.....	8,670	Muskegon, Mich.....	11,262	Saginaw, Mich.....	10,525
Ironton, Ohio.....	8,857	Nashua, N. H.....	13,397	Salt Lake City, Utah..	20,768
Ithaca, N. Y.....	9,105	Natick, Mass.....	8,470	Sandusky, Ohio.....	15,838
Jackson, Mich.....	16,105	Newark, Ohio.....	9,600	San Antonio, Tex.....	20,550
Jacksonville, Fla.....	7,650	New Albany, Ind.....	16,423	San José, Cal.....	12,567
Jacksonville, Ill.....	10,927	New Brighton, N. Y..	12,679	Schenectady, N. Y....	13,655
Jamestown, N. Y.....	9,357	New Britain, Conn....	11,800	Saratoga Springs, N. Y.	8,421
Janesville, Wis.....	9,018	New Brunswick, N. J.	17,166	Sedalia, Mo.....	9,561
Jeffersonville, Ind.....	9,357	Newburgh, N. Y.....	18,049	Selma, Ala.....	7,529
Johnstown, Pa.....	8,380	Newburyport, Mass..	13,538	Shamokin, Pa.....	8,184
Joliet, Ill.....	11,657	New Castle, Pa.....	8,418	Shenandoah, Pa.....	10,147
Keokuk, Iowa.....	12,117	New London, Conn....	10,537	Shreveport, La.....	8,009
Kingston, N. Y.....	18,344	Newport, Ky.....	20,433	Somerville, Mass.....	24,933
Key West, Fla.....	9,890	Newport, R. I.....	15,693	South Bend, Ind.....	13,280
Knoxville, Tenn.....	9,693	Newton, Mass.....	16,995	Springfield, Ill.....	19,743
La Crosse, Wis.....	14,505	Norfolk, Va.....	21,966	Springfield, Ohio.....	20,730
La Fayette, Ind.....	14,860	Norristown, Pa.....	13,063	Stamford, Conn.....	11,297
Lansing, Mich.....	8,319	North Adams, Mass..	10,191	Steubenville, Ohio....	12,093
La Salle, Ill.....	7,847	Northampton, Mass..	12,172	Stillwater, Minn.....	9,055
Lawrence, Kans.....	8,510	Norwalk, Conn.....	13,956	Stockton, Cal.....	10,282
Leadville, Colo.....	14,820	Norwich, Conn.....	15,112	Taunton, Mass.....	21,213
Leavenworth, Kans..	16,546	Ogdensburg, N. Y....	10,341	Tiffin, Ohio.....	7,879
Lebanon, Pa.....	8,778	Orange, N. J.....	13,207	Titusville, Pa.....	9,046
Lexington, Ky.....	16,656	Oshkosh, Wis.....	15,748	Topeka, Kans.....	15,452
Lima, Ohio.....	7,567	Oswego, N. Y.....	21,116	Vicksburg, Miss.....	11,814
Lewiston, Me.....	19,083	Ottawa, Ill.....	7,834	Vincennes, Ind.....	7,680
Lincoln, Nebr.....	13,003	Ottumwa, Iowa.....	9,004	Virginia City, Nev..	10,917
Lincoln, R. I.....	13,765	Paducah, Ky.....	8,036	Waltham, Mass.....	11,712
Little Rock, Ark.....	13,138	Pawtucket, R. I.....	19,030	Warwick, R. I.....	12,164
Lockport, N. Y.....	13,522	Petersburg, Va.....	21,656	Waterbury, Conn.....	17,806
Logansport, Ind.....	11,198	Pittsfield, Mass.....	13,364	Watertown, N. Y....	10,697
Long Island City, N. Y.	17,129	Plainfield, N. J.....	8,125	Watertown, Wis.....	7,883
Los Angeles, Cal.....	11,183	Port Huron, Mich....	8,883	Westfield, Mass.....	7,587
Lynchburg, Va.....	15,959	Port Jervis, N. Y....	8,678	West Troy, N. Y....	8,820
Macon, Ga.....	12,749	Portland, Oreg.....	17,577	Weymouth, Mass.....	10,570
Madison, Ind.....	8,945	Portsmouth, N. H....	9,690	Wilkes-Barre, Pa.....	23,339
Madison, Wis.....	10,324	Portsmouth, Ohio.....	11,321	Williamsport, Pa.....	18,934
Malden, Mass.....	12,017	Portsmouth, Va.....	11,390	Wilmington, N. C....	17,350
Mansfield, Ohio.....	9,859	Pottsville, Pa.....	13,253	Winona, Minn.....	10,208
Marlboro', Mass.....	10,127	Poughkeepsie, N. Y..	20,207	Woburn, Mass.....	10,931
McKeesport, Pa.....	8,212	Quincy, Mass.....	10,570	Windham, Conn.....	8,264
Meadville, Pa.....	8,860	Racine, Wis.....	16,031	Woonsocket, R. I....	16,050
Medford, Mass.....	7,573	Raleigh, N. C.....	9,265	Yonkers, N. Y.....	18,892
Meriden, Conn.....	15,540	Richmond, Ind.....	12,742	York, Pa.....	13,940
Milford, Mass.....	9,310	Rockford, Ill.....	13,129	Youngstown, Ohio....	15,435
Middletown, N. Y....	8,494	Rock Island, Ill.....	11,659	Zanesville, Ohio.....	18,113

ADMINISTRATION.

The schools of cities are controlled and managed by local boards, variously designated in different sections of the country as school committees, school visitors, school directors, school trustees, school commissioners, and school boards. These boards differ not only in name, but they differ very considerably in respect to number, mode of election, tenure of office, powers, and duties, but for the most part they directly represent the opinions and will of the people themselves in reference to the maintenance and condition of their schools. The American school system is largely founded on the idea of local competency in the management of educational affairs; hence the most important factor in the success of city systems is found in the character of the school boards; and there is no one problem connected with the economy of these systems so important and so difficult of solution as that of securing competent school boards. In Prussia they say, "As is the teacher, so is the school;" in Holland they say, "As your inspection is, so is your school;" with us it would be more fundamentally true to say, "As is your school board, so are your schools." Nobody denies that the men chosen to serve on a city school board ought to be the foremost citizens in respect to intelligence, integrity of character, public spirit, sound judgment, and social standing. In practice it has been found extremely difficult to reach this standard. The school boards are probably few and far between among whose members there are not some persons unqualified for a trust of such importance. This office is not unfrequently used by young politicians and old politicians of the inferior order as a stepping-stone to coveted political places. In too many instances it is sought for by patientless doctors and clientless lawyers as a means of professional advertising. It is too often traded off by politicians, for assistance in running the political machine, to incompetent persons, who are gratified by the local notoriety which it affords. And yet, on the whole, great credit must be accorded to our city school boards; the great and undisputed success of the city systems, generally speaking, is the measure of their merit. The worthy and the competent have far outnumbered the unworthy and incompetent. The roll of every school board bears the names of members who deserve the lasting gratitude of their fellow citizens for their faithful, self sacrificing, judicious, and persevering labors in behalf of the public school interest.

The city boards of education differ very considerably in respect to the number of members of which they are composed, this number ranging between the extremes of three and fifty and, in many instances, being not at all proportioned to the population of the city to which it belongs. The Boston board, previously to its reorganization in 1876, was carried up, in consequence of the annexation of adjacent municipalities, to the unwieldy number of 116. Pittsburgh, with a population of about one-ninth of that of New York, has a board more than 50 per cent. larger;

Louisville, with a population less than a third of that of St. Louis, has a board of equal size. The Denver board consists of only six members.

The boards differ not only in the proportion of members, but also in respect to mode of election and tenure of office. The boards are constituted by provision of the State laws; in some States there is a general provision therefor; in others city boards are constituted by provision contained in the city charters. In a few cases special provision is made to meet the peculiar wants of particular cities. In general the members are elected by popular vote to represent subdivisions or wards of cities and to hold office for two or three years, one-half or one-third of the members being elected each year.

The aim of the most intelligent friends of our schools has been to separate their administration as far as practicable from the influence of party politics. In this direction, however, much remains to be desired. Everywhere there are unscrupulous politicians who do not hesitate to improve every opportunity to sacrifice the interests of the schools to the purposes of the political machine. Here is found the source of the most general, as well as the most serious, evil of our city systems. Long ago this evil became so grievous in some of our largest cities that the election of school boards by popular vote had to be abandoned. In New York it was replaced by appointment by the mayor; in Philadelphia, by appointment by judges of a superior court; in Chicago, by election by the city council. In other cities various expedients have been resorted to as safeguards against the "harmful influence of ward politicians" in the administration of school affairs: in Pittsburgh, for example, the members of the central school board are elected by the local school boards; in Boston for a number of years past the members have been elected on a general ticket. Perhaps there is no city whose school board is constituted in a more objectionable manner than that of the city of Buffalo, which is merely a special committee of the city council, holding office for one year only. On the other hand, it is safe to say that no city has ever come nearer to the realization of the ideal school board than has the city of Denver. The members of this board have been, from its origin, so far as I was able to ascertain by inquiry on the ground, unexceptionable in respect to character, ability, and faithful devotion to the interests of the schools. The choice has been made at a special election for this purpose alone, without any connection whatever with municipal or State elections. I am far from concluding, however, that this happy result is attributable solely to the mode of election; it is due to a peculiar concurrence of circumstances in connection with the mode of election; and the long continuation of similar results is too much to expect. In a few States women have been made eligible to school boards, not, however, as yet with any marked results; and in several States women have been granted the privilege of school suffrage, as a means of counteracting political and other corrupting influences in the election of school boards; but as yet women have shown but

little disposition to avail themselves of this franchise.¹ Thus it appears that the two directly opposite expedients of extending the suffrage to women on the one hand and on the other of suppressing even male suffrage have been adopted as means of securing more competent school boards; but it must be admitted that the problem remains unsolved; and without doubt this is the supreme educational problem which remains for our educational statesmanship to grapple with.

In a few cities there are local school boards sharing the responsibility of school management with the general board, notably New York, Philadelphia, and Pittsburgh. In the last two they are elected by the people; in the first this mode of election has been replaced with great advantage by election by the general board. Experience has proved that independent local boards are not only undesirable, but highly objectionable. But local managing boards, wholly dependent on the general board, both in respect to appointment and functions, as in the London system, seem to be not only desirable but quite necessary in the administration of large city systems. In Philadelphia the administration affords a remarkable example of decentralization, there being no less than thirty-one local boards, comprising from ten to twenty members each. Paris, on the other hand, presents a striking example of centralization, the vast and efficient school system of that city being administered by a single director, without the interference or support of any school board whatever.

The primary school board of Boston (appointed by the grammar school board), which was abolished thirty years ago, consisted of about two hundred members, the idea being to make the number equal to the number of teachers under its charge.

The following table shows (1) the population of a few representative cities, (2) the number of members in each school board in those cities, (3) the terms of service, (4) the representation, and (5) the mode of choice.

Cities.	Population.	No. of members.	Term of service.	Representa- tion.	How chosen.
New York	1, 206, 290	21	3 years ...	At large	Mayor.
Chicago	503, 185	15	2 years ...	At large	People.
Boston	362, 839	25	3 years ...	At large	People.
St. Louis	350, 518	26	2 years ...	Ward, 2.	People.
Cincinnati	255, 139	50	3 years ...	Ward, 2.	People.
Cleveland	160, 146	18	2 years ...	Ward, 1.	People.
Pittsburgh	156, 389	33	3 years ...	Ward, 1.	School directors.
Buffalo	155, 134	.....	1 year	At large	President city council.
Louisville	123, 758	26	2 years ...	Ward, 2.	People.
Worcester	58, 291	25	3 years ...	At large	People.

Organization.—In Massachusetts cities the mayors are ex officio presidents of the school boards, but in general school boards elect their

¹ In 1883 in the State of New Hampshire, where women have been granted the school franchise, less than a hundred women, it is said, voted for school officers.

presiding officers from their own members. There are two prevailing types of organization for the performance of administrative duties, of which St. Louis and Cincinnati may be taken as examples. The St. Louis board has only *twelve* standing committees, which are as follows: (1) On teachers; (2) on lands and claims; (3) on leasing; (4) on building; (5) on course of study, text books, and apparatus; (6) on auditing; (7) publications and supplies; (8) on the library; (9) on janitors; (10) on ways and means; (11) on salaries; and (12) on rules and regulations. Of these committees, only three (1, 5, and 12) have direct reference to matters relating to instruction and discipline, the other nine being business committees. *There are no committees whatever on school districts or schools*, although the committee on teachers acts as standing committee on the normal school and is required to visit and perform some other duties in respect to the high school.

The Cincinnati board of education, on the other hand, has *twenty-five* standing committees,¹ designated as follows: Boundaries, buildings and repairs, claims, course of study and text books, discipline, drawing, examinations, fuel, funds and taxes, furniture, German department, gymnastics, law, lots, music, night schools, normal school and teachers' institute, penmanship, printing, reports and excuses, rules and regulations, salaries, stoves and furnaces, supplies, and ungraded schools. In addition to this formidable array of standing committees, there are thirty-four subcommittees on districts and schools.

Nor does this complete the list. The "union board," composed in part of members of the board of education, which has charge of the high schools, employs in the performance of its functions no less than fifteen committees, so that the management of the whole system of schools is shared by *seventy-four* committees. The organization of the Chicago board belongs to this type, the whole number of its committees being *seventy-nine*.

Cleveland, on the other hand, follows the example of St. Louis in dispensing with district committees altogether and in judiciously limiting the number of standing committees. The old organization of the Boston board, in complication and decentralization, belonged to the Cincinnati type; while the new organization, in simplicity and centralization, and consequent efficiency and absence of friction, approaches much more nearly that of St. Louis. The St. Louis type of organization is, no doubt, much better than that of Cincinnati.

Powers and duties.—For the most part school boards are invested with authority to manage whatever relates to instruction within the limits prescribed by law and to control the expenditure of the funds legally provided therefor. They have the power to certificate, elect, and dismiss teachers and fix their compensation; they determine the

¹Previous to the recent reorganization, by which the number of members is reduced to 37 and the standing committees to 18.

grading and courses of study of the schools and prescribe the text books to be used. They make the regulations for admission of pupils to the different grades of schools, for promotion from one class to another, and for graduation, but are not empowered either to establish schools or to provide for instruction not authorized by law, neither have they the custody and disbursement of the school moneys.

There are, however, important cities where the powers are much more restricted; for example, Philadelphia, Pittsburgh, and Hartford. In the former two the central boards share the powers and responsibilities of school management with local boards, having exclusive control only of the high schools.¹ They have, however, control of three vital elements of school economy, namely, (1) that of determining the number of teachers to be employed, (2) of fixing their salaries (within the limits of the appropriations), and (3) of prescribing the text books and the courses of study. In Hartford we have perhaps the extreme existing example of decentralized administration. In this city ultraconservatism has succeeded in retaining, until the present time, the antiquated district system, which has been so long disapproved by every intelligent school man; each district raises and expends its own school money, builds its own school-houses, and in fact has almost absolute control over its school matters within the limits of the State law, leaving to the central board little authority except the control of the high school. Under this system, while the wealthiest districts have had good schools maintained on a liberal scale, the poorer districts have not fared so well; in some parts of the municipality the schools are hardly adequate to the preparation of pupils for admission to the high school. The district system is essentially antagonistic to the great principle which should control school legislation and school administration, namely, equality of burdens and equality of privileges.

In contrast to these examples of decentralized power there are some cities where a single moderate sized board exercises almost absolute authority in the management of school affairs. Of this number New York and St. Louis are the most prominent. In New York the board has almost unlimited authority in all matters relating to school property, not being dependent on any municipal body either for the purchase of sites or the erection of school-houses. The St. Louis board has still larger powers, and that city is one of the few municipalities where the school boards are intrusted with the disbursement of school moneys. All boards, with perhaps the exception mentioned below, are probably alike in one particular, namely, in being limited by law, or by the action of some other city authority, as to the amount of money they may expend for school purposes. The school boards of Massachusetts, though invested with less power in some respects than those in some other sections, possess one power which is peculiar and highly important: they have the right to determine absolutely the number, the grade, and rates of salaries of teachers, without regard to the amount appro-

pritated for this purpose by municipal authorities. On the other hand, the municipal authorities have the power to stop school expenses and close the schools at the end of six months in each year if they think the scale of expenditure is too high for the approval of the popular will. This balance of power, which has long been a feature of the school system, has worked most satisfactorily, giving to the board sufficiency of independence in the matter of expenditures and to the administrators of the public revenue the power to check any extravagance on the part of school boards. This wise, far-reaching, and fruitful provision is doubtless one of the very best features of the system. The result has been a liberal support of the schools, while the tendency to extravagance on the part of school boards and the tendency to parsimony on the part of city councils have been kept under wholesome restraint. As a matter of fact, the schools have in no case been actually suspended from lack of funds.

Another important power which is believed to be peculiar to the school boards of this State is that of providing school accommodations temporarily without regard to municipal appropriations therefor. The result of this power is that, as a rule, no children are deprived of schooling from lack of school accommodations.

School boards may be divided into three classes respecting their power in purchasing sites and building school-houses, namely: (1) the class exercising all the power in purchasing sites and building school-houses, (2) the class which divides this power with the city council, (3) the class which has no authority whatever in providing school accommodations.

St. Louis affords an example of the first class; Chicago and Boston, of the second class; Philadelphia and Hartford, of the third. In Chicago the sites are purchased by the city council; the rest is done by the school board. In Boston until 1875 the school board had no authority in determining the location or character of the school-houses; since that date they have had the veto power, both in respect to location and plans, and this division of power has thus far proved very satisfactory. Had this veto power been given twenty years earlier the four story school-houses in that city would have been fewer.

The history of city systems of schools makes it evident that in the matter of administration the tendency is towards a greater centralization and permanency of authority and that this tendency is in the direction of progress and improvement.¹ No doubt excessive decentralization of administration has been one of the chief obstacles to improvement in every department of our free school system.²

ORGANIZATION OF INSTRUCTION.

The characteristic fact in the pedagogical organization of our city

¹ A student of this subject would also do well to note the experiences in Ohio and other States along the line of application of the so-called Akron school law for the organization of city boards of education.

² For the writer's observations on "Supervision" see pages 52-59.

schools is the division of the schools into three grades: the high, grammar, and primary. The demarcation between the primary and grammar divisions has no foundation in the nature of things. The grammar and primary courses of study taken together constitute the elementary course and should be considered as a whole. On the other hand, the elementary and high schools constitute two distinct categories of instruction. The high school belongs to secondary instruction, or the first stage of liberal education. Elementary education is that which is deemed essential for every citizen, whatever may be his destination, and hence it is that which is generally considered as obligatory. The high school, on the other hand, while it is desirable that it should be open to all, is not expected to give instruction to the masses of pupils. In theory there is a very considerable approximation to uniformity in respect to the upper limit of the elementary course, or, what amounts to the same thing, in respect to the line of demarcation between the grammar and high school courses. In general it is intended so to frame the elementary course, as to its stages and the amount of work to be done, that the average pupil may complete it at the age of fourteen, provided the system of instruction is conducted with sound judgment and efficiency. While there is a general uniformity as to the upper limit of the elementary course and the lower limit of the high school course, there is a very considerable diversity as to the upper limit of high school instruction, both in respect to the studies prescribed and the period at which they are supposed to be completed, as is more specifically set forth under the head "High schools." While the lower limit of elementary education is, of course, substantially uniform in respect to the substance of the matters taught, in respect to the age it is not so, the lower limit as to age being six in a large proportion of the cities, while perhaps in a nearly equally large proportion it is five.

In the city of St. Louis the whole course of public instruction is divided into three periods of four years each, the primary, grammar, and high school courses comprising four years each; so that the pupil entering the primary school at the age of six, by regular promotions, will have graduated at the high school at the age of eighteen. The courses of these three grades are subdivided, respectively, into four divisions, each intended to be completed in one year's time. The plan of organization of which this is the type has been quite largely adopted in western cities. In Cincinnati we find a somewhat different type of organization. Although the age at which pupils begin and the time required to complete the whole course (12 years) are the same as in St. Louis, the elementary course is differently divided. The schools of the lowest grade are called district schools, with a course of instruction comprising five years. The schools embraced in the upper grade of the elementary course are called intermediate schools, with a curriculum designed to be completed in three years. This type of organization is found to some extent in other cities in Ohio, and, perhaps, in some other neighboring States.

In the Middle and Eastern States we find organizations differing somewhat, not only from those described, but also from each other. In New England cities very generally the primary course comprises three years, for pupils from five to eight years of age, while the grammar school course comprises six years. In Philadelphia and some other cities, there is a separate grade of schools between the primary and grammar, with a course of study comprising two or three years, called intermediate. In Richmond the primary course comprises four years, the grammar three, and the high three.

Besides this view of organization, which regards the scope of instruction, the division into grades, and the subdivision into classes, there is another view relating to the disposition and grouping of the grades and classes into schools for the purpose of direction and management by principals. In most cities the high school grade constitutes a separate establishment, while there is much diversity in the grouping into schools of the classes of the elementary grades. In the Western States, most commonly elementary schools comprise both the primary and grammar grades under the same principal and are housed in the same building. In the Middle and Eastern States, on the other hand, primary and grammar grades of pupils are generally instructed in separate schools, the schools of either grade having their own principals. In New York the primary schools are very large establishments, some schools containing as many as fifteen hundred pupils. In Boston, on the other hand, the primary schools are intended to be establishments of moderate size, the maximum primary building erected in recent years containing not more than eight school rooms. The average number of teachers to a primary school building in 1876 was a little less than six. From one to three or four of these neighborhood primary schools are grouped around each grammar school, in locations best adapted to accommodate the pupils, the master of the grammar school exercising the function of principal of these schools. This mode of organization possesses peculiar advantages.

In most cities the territory is divided into districts corresponding to the organization of the schools; that is, each school or group of schools under the same principal has its own district, pupils being required to attend the school within the district where they reside.

Where this arrangement exists, a pupil can have no choice of schools; he must attend the one in the district where he resides. Hence there can be no competition between the schools in respect to the number or character of the pupils admitted. Of course, such district limits must be established and rigidly maintained where the salaries of principals depend on the number of pupils or grades of the classes under their direction. It is evident that this district system renders a perfect uniformity of text books necessary, no less than uniformity in the course

of study. Otherwise the pupils in removing from one district to another could neither find their classes nor use their text books. New York is the most notable exception to this rule. In this city, while each ward constitutes a district with reference to the management of the schools by the local board of trustees of the ward, the attendance of the pupils is not restricted to any particular school or schools. This liberty in respect to attendance is rendered necessary by the want of uniformity of text books, which without this liberty would make it necessary for the pupils to change their text books whenever they changed their residence; and then the absence of district limits enables certain principals, with the concurrence of the local committees, to build up schools of a peculiar character, as there is nothing to hinder them from drawing their pupils from any part of the city. Hence the schools of New York, especially the grammar schools, have come to have a more marked individuality than those of other cities. One school, for instance, gets a reputation for fitting its pupils for the high school, while others become noted for fitting their pupils for practical business.

HIGH SCHOOLS.

The origin of our modern high school is coeval with the elementary public school. By the first school law of the colony of Massachusetts Bay, enacted in 1647, every town containing one hundred families or householders was required to "set up a grammar school," whose master should be "able to instruct youth so far as they may be fitted for the university." The establishment of the existing Latin grammar schools in Boston and Roxbury antedates this law. The institution of the English high school in Boston, in 1821, providing for a course of instruction in the French language and the English branches of a high school education, was designed for boys not destined to the university, but requiring a higher and broader education than was afforded by the elementary school, to fit them for responsible positions in commercial and industrial pursuits. So popular was this measure of educational progress that it was adopted by the citizens in town meeting, assembled in Faneuil Hall, with substantial unanimity. Happily the originators of this scheme were bold enough and sagacious enough to demand for the object in view a thoroughly organized and equipped *separate* school, instead of contenting themselves with the addition of a modern department to the ancient classical school, although that institution was then flourishing under one of the ablest of its line of accomplished masters. Fortunately this school has been permitted to maintain its individuality without interruption for more than three score years, the distinctive American representative of the German Realschule. A few years later, 1826, a similar high school for girls was established. Thus the foundation of the American free high school system was laid; it was several years, however, before the high school began to be set up in the other parts of the Union.

The institution of the Central High School for Boys in Philadelphia, in 1837, on a more liberal scale than any which had preceded it, under the direction of a principal of eminent ability,¹ marks another era in the high school development. From this date the spread of the high school went on with increasing rapidity, and it is now probably recognized as an essential part of the public school system in nearly every city in the Union. In its development, however, it has not followed the original process. In a few of the largest and oldest cities, the beginning was made with a single boys' school, with classical and non-classical courses, separate girls' schools coming later; but in general (the demand for high school instruction for both sexes and of both kinds, classical and non-classical, being simultaneous and the means at the outset for providing it being limited) the beginning has been made with a single school mixed both as to sexes and courses. The first high school of this kind was established in 1831 at Lowell,² then a small manufacturing town only about nine years old; in the beginning it had but one course of study, and that was imperfectly defined, and its organization was in all respects similar to that of the mixed country academies then so prevalent in New England. A few years later, however, the single course was replaced by two distinct courses, classical and non-classical.

This is the prevailing type of our high schools. But the history of education does not justify the assumption that it is a finality. The law of progress, after enforcing specialization of courses *within* an institution, proceeds at the next step to the specialization of institutions. In a certain number of the smaller cities the course is mostly limited to what may be called an English course, comprising only the rudiments of the Latin language and something of French and German, without any Greek. From this rudimentary type we find, in going upward through the successive ranks of cities below the first class, the high schools become more comprehensive in scope and complex in organization, in some cases comprising the preparatory, non-classical or English, commercial, and normal courses. The grand high school at Pittsburgh, installed in its palatial edifice, is an example of the expansion of the mixed high school into these four departments. The first stage of prog-

¹A. D. Bache, LL.D., subsequently Director of the Coast Survey.

²Lowell high school was first opened with 47 pupils, boys and girls, in December, 1831, with Thomas M. Clark, now bishop of Rhode Island, for its teacher. He was then only nineteen years of age. He had an assistant, a Mr. Clapp. Originally, boys and girls sat in the same room, and from the first till now it fitted boys for college, and in it all the higher English studies were pursued. Originally it had but one course of study, poorly defined, and pupils staid in the school six or seven years; no regular limit as to time; and no diploma and no graduating exercises. Diplomas began to be awarded in 1858. There was no similar school of earlier date. Lowell is not an old city; it began to be about 1822. I first entered the school on Tuesday, July 15, 1845, and I left it in the summer of 1883. I served as principal thirty-eight years. Our course of study became fixed about 1858, when graduating exercises and the awarding of diplomas began.—(From a letter by Mr. C. C. Chase, April, 1884.)

ress consists in the process thus indicated of multiplying the special functions of a single institution. The next step is the specialization of the institutions themselves, thus simplifying their functions and increasing their efficiency. This specialization of high schools is seen in different stages of development in most of the cities of the first class and in some of those of the second. The first division is according to the sex of the pupils. In New York, Philadelphia, Louisville, San Francisco, New Orleans, and Charleston there is a high school for boys and a high school for girls. In New York, Philadelphia, and San Francisco, however, the high school for girls is a normal school as well. In Baltimore there are two high schools for girls and two for boys, counting as one the recently established manual training school. In New York, Baltimore, Louisville, and Philadelphia the high school for boys is carried up into the college grade, leading to the degree of bachelor. In St. Louis there is one high school, with local branches; in Cincinnati there are two and in Chicago three. These are all substantially of the same type, namely, mixed schools, with classical and non-classical courses.

We have seen that in Boston the foundation of the high school system was begun by a specialization of institutions instead of a specialization of courses within an institution. In harmony with this method a *separate classical* high school for girls was opened in 1878, although this plan was opposed by the friends of coeducation, who urged as a substitute the admission of girls to the Latin school for boys. In the mean time the first high school for girls above mentioned, having been set up in advance of public sentiment, had a short life, being abolished under the lead of a very eminent and public spirited citizen, who represented the aristocratic sentiment, which is always anxious to keep the education of the people within pretty narrow limits. A quarter of a century later the establishment of a city female normal school was immediately followed by the demand of the people for a girls' high school. This demand was met by the makeshift method of reorganizing the normal into a girls' high and normal school, the result being a good high school and a poor normal school. In time the specializing process took the poor, pinched normal department out of this double organization and organized it into a separate school, which soon became vigorous and efficient. We find here, also, another interesting illustration of the process of specialization in the development of the high school system by the annexation of adjacent municipalities. The Boston system was by this means increased by the addition of five high schools, mixed both as to sexes and courses; and, besides, the old endowed Roxbury Latin Grammar School, above alluded to, was opened to the inhabitants of the whole city as a free classical school for boys. The annexed mixed schools were allowed to remain mixed as to sex, but their courses were unified in conformity with that of the English high school, the elements of Latin however still being permitted in addition for the local convenience of beginners in the classical course,

who must later go to the central Latin schools in order to complete the preparation for college. At the same time an advanced course of two years was added to the original course of three years in the central boys' English high school and in the corresponding school for girls, to which the graduates of the local high schools were admitted. And, finally, a new high school of the local type has been recently established to accommodate the inhabitants of an outlying district of the city.

The system as it now stands, then, exclusive of the free corporate school above referred to, consists of six local mixed schools of the lower order and the four central schools of the superior order, a classical and a non-classical one for each sex.

This central group of four high schools may be regarded as the normal type of high school organization. It is in harmony with the organization of secondary education in the most advanced educating countries, which educates the sexes in separate schools and provides separate classical and non-classical schools for boys, of which the representative types are the German Gymnasium and Realschule. Considerations of economy will prevent this specialization in the small cities. In the largest cities, as we have seen, the progress towards this specialization is already considerable, and the history of education justifies the prediction that it will continue to advance in proportion as the inhabitants comprehend what is best in education and demand it for their children.

The ancient and cultured city of Salem is the only city where a fair trial of the specialized and doubly mixed systems has been made. The former was tried first for many years; it was exchanged for the latter twenty-five years ago to save expense. The result has not been satisfactory, and a movement is now on foot for restoring the specialized system, which is said to meet with no serious opposition, except from the economical point of view.

But the specialization of the high school system in our large cities is not to stop here. We see already that Baltimore has incorporated into her system an institution for higher education, patterned after the corporate manual training high school at St. Louis.¹ It seems quite probable that high schools of this kind, with such modifications as experience may suggest, will be established in all the principal cities. Such a school will no doubt meet the wants of a certain class of pupils, but if adopted it should be in addition to the standard types of classical and non-classical high schools, and not as a substitute for either of them. And the reasons for establishing a supplementary high school of this kind for boys hold equally good for establishing a corresponding school with appropriate hand work for girls.

Nearly the whole of this vast system of city high schools, offering its instruction gratuitously to the whole urban population of the country, is the growth of a period scarcely exceeding a generation. Forty years

¹ See under the head "Industrial education."

ago there was not one public high school west of the Alleghanies and those of the Atlantic cities south of New England could have been counted on the fingers of one hand. It was scarcely thirty years ago that a few public spirited inhabitants of a small Connecticut city contributed upwards of \$100,000 to found and endow a free academy, to be controlled by a close corporation and to serve the purpose of a high school. This voluntary scheme was undertaken because of the conviction of its originators, only so far back in the past, that the popular will could not be relied upon either for the support or administration of high schools. How erroneous this conviction was may be illustrated by citing the case of the high school in the capital of the same State. In this city a little before the time referred to, the building for the high school had been erected, costing, with the lot, a little upwards of \$10,000, which was considered a very liberal, if not extravagant, expenditure for the purpose. Scarcely more than a dozen years had passed before the relative conditions of these schools were radically changed. The free academy found its resources inadequate; there was no advancement from the time of its institution; it was in want of additional instructors and apparatus which it had no means to provide.¹ On the other hand, the Hartford school, relying for its support on the annual appropriation from the municipal treasury, has been furnished with everything needful for its development and efficiency. It had been installed in a magnificent new edifice, which had cost, with its lot (the finest site in the city), a sum equal to nearly sixteen times the cost of the original edifice. This noble edifice, having been consumed by fire in 1882, has been replaced by a still grander building (November, 1884), costing, with its furnishings, library, apparatus, &c., \$285,000, the cost of the lot in addition having been \$30,000. This sum of money was appropriated by a vote of the citizens of the town of Hartford in town meeting, the town comprising the city and some territory outside of its limits.

The rapid growth of public sentiment in favor of the high school has not been confined to any one section of the country; it has been universal, east, west, north, and south. The high schools of Omaha and Denver are as completely organized and equipped as the high schools in cities of similar size in the Middle and Eastern States. There is no topic on which recent reports speak with more earnestness and decision than on the importance and success of the high schools. The assaults which have been made upon them in recent years by the opponents of liberal provision for public instruction appear to have been ineffectual. Everywhere they have maintained their ground; indeed, there has been no perceptible check in their growth and development. It is becoming more and more evident that the free public high schools are as highly prized by the people as are the elementary schools. They naturally find favor in a democratic community because they are the

¹ Since this was written, it has received a considerable donation.

most truly democratic of all our institutions. An eminent French educator (M. F. Buisson) says: "So far as social equality can be attained here below, it is attained in the American high school. There all is done that can be done to push as far and as high as possible that common instruction which obliterates the distinction between the rich and the poor." Nothing is more common than to see pupils representing the extremes in the social scale sitting side by side in the high school classes. I have seen the son of a cultured and wealthy merchant and the son of a very poor immigrant going together from the same class in the grammar school to the same class in the high school, the former expending his pocket money to buy the requisite outfit of clothes and books for the latter. I have seen young ladies coming from families of the first rank, not only in respect to culture and wealth, but also in respect to ancestral pretensions, passing the three-year course in the girls' high school side by side with the daughter of the laborer and of the washerwoman. In a suburban town I have seen the daughter of a wealthy manufacturer procuring by subscription the funds to enable a classmate, the worthy son of a poor Irish farmer, to obtain the clothing needful to make it practicable for him to perform the part assigned him on graduating day. At this same school on graduating day I have heard the salutatory address by the daughter of an English immigrant laborer who can neither read nor write and the valedictory by the daughter of the wealthiest capitalist in town, while the most meritorious performance on the occasion was by a sister of the young man just referred to. This young man, it may be added, who has been during the five or six years since his graduation most industriously at work on his father's little farm, is an ardent friend of the high school, and he regards the "idea that education unfits a man for manual labor as simply nonsensical." The next neighbor to this young man's father is a man of the same nationality and in similar circumstances, who lately showed me with no little pride two silver medals which a son and a daughter now working together in the same shoe factory obtained at the high school. "But," said I, "I have just been reading the writing of a man of learning and influence condemning the free high school and arguing that it should be abolished." "That man," he replied, "I consider an enemy to his country." Such examples not only afford an illustration of the tendency of the high school to obliterate social distinctions, but they go to prove that it is a veritably national institution. It has struck its roots deep in the American soil, and there is no Vandal arm strong enough to pluck it up. More especially is the urban population of this country effectually indoctrinated in Huxley's creed that an adequate system of public schools must be a ladder with one end in the gutter and the other in the university.

About twenty years ago certificates of graduation, usually called diplomas, began to be given to pupils in some of the most completely organized high schools on completing the prescribed course of study.

This practice has now become general, if not universal, and it has had an important effect. One of its beneficial effects has been to induce a considerable percentage of the pupils to complete the course who would otherwise have dropped off in its lower stages. It has raised the average scholarship by inspiring the laggards with the wholesome fear of the disgrace of failing to be enrolled with the graduates. It makes graduating day an occasion of great popular interest, well calculated to influence the decision of parents in favor of a higher education for their children. The diploma is commonly framed and conspicuously hung in the home, where it remains a precious memento and a perpetual recommendation of the high school.

Associations of alumni of the high schools have spread as far and as rapidly as the custom of awarding diplomas. These associations hold annual festivals of a mixed literary and social character, beginning with an oration or essays, speeches, and poems, and ending with a promenade concert or a supper and a dance. The history, the utility, the success, and the wants of the alma mater are the never failing themes of the occasion. It is easy to see that every gathering of this sort is a plea for the cause of the people's college, which cannot be in vain.

It appears from an examination of statistics that in the smaller cities the provision for high school instruction is relatively more ample than in the largest and most wealthy cities and that a greater percentage of the population is receiving higher education in the public school. In these respects our three largest cities, New York, Philadelphia, and Brooklyn, are far behind Albany, Cleveland, and Pittsburgh. Our two largest cities have each two public schools for higher education, and two only. These are all noble institutions and they are doing a service of incalculable value. But when compared with the great cities of Europe, New York and Philadelphia, to say nothing of Brooklyn, which is only making a beginning in high school instruction, are far behind. Ten years ago there were more boys attending the splendid public schools¹ for higher education in Vienna, without counting its university, with 4,000 students, its great polytechnic school, its superior school of commerce, or its normal schools, elementary and superior, than were enrolled at the time in the public high schools of the twelve largest cities in the United States. These schools were taught by 360 professors, each enjoying a permanent tenure of office, an irreducible salary, and a right to a very liberal retiring pension. In Berlin the whole number of municipal schools for the secondary instruction of boys is 21, namely, 10 Gymnasien, with 6,868 pupils; 7 Realschulen, with 5,110 pupils; and 4 industrial schools, with 1,216 pupils, the whole number of pupils amounting to 13,194. These schools are taught by 21 directors, 365 professors, and 54 masters—440 in all—whose annual salaries amount to 1,845,540 Mark—about \$461,385. And, if the com-

¹ Prince Schwarzenberg, one of the greatest potentates of the Empire, told me that his grandsons were in one of these schools.

parison were extended to Paris, the result would be no less to the disadvantage of our largest cities. It is clear that these cities, in order to keep pace with the demands of the times, must provide a greater number and variety of public high schools.

While the high school, which has been so rapidly extended and so liberally supported by the voluntary taxation of the people, is the flower of the system, it is not without its faults and imperfections. Free secondary education having now become a fixed fact, attention in the future will naturally be given in larger proportion to the work of perfecting its organization and management, so as to adapt it more completely to the wants of all classes of citizens and render it an instrument of the greatest possible good, accompanied by the least possible evil. In my view, the evil connected with the high school which most loudly calls for a remedy is the harm which it is doing to the health of the girls who attend it. This evil is not of recent origin. It dates back to the time when girls were first admitted to high schools; it is not limited to any particular description of high schools; it is found in both small ones and large ones, in separate schools and mixed schools. Nor is it restricted to any one region or section of the country; wherever there is a high school there the evil is found and there the application of the remedy should begin. Of course, the harm inflicted has its degrees. There may be schools under very judicious management of parents, committees, superintendents, principals, and teachers, where the injury to the health of girls has been reduced to a minimum. I am not aware, however, that such a school has come under my observation. On the other hand, there is a large number of schools, among which are some of the most noted in the country, where the injury inflicted upon the health of the female pupils is a very serious evil. What I mean is precisely this, that the evil of which I am speaking is general in our high schools and that the reform in this respect should be general; not that the evil reaches every individual pupil, but that it affects injuriously some pupils, even in the best schools, and a large percentage of the pupils in that large class of schools where as yet hygiene is only a word and not a reality. In justice to the public high schools it should be said, however, that the evil is not confined to them. It is quite as serious, if not more so, in the whole body of thoroughly organized institutions for higher female education. The causes of this evil are manifold. The following are some of them: Injudicious application of the marking system; injudicious system of examinations; too many studies; too many home lessons; an injudicious method of teaching, which confounds thoroughness with exhaustiveness; too much pressure to secure punctuality and regularity of attendance; rolls of honor printed in annual reports; competition for honors and medals; too long abstinence from substantial food and nourishing drinks; bad air; cold draughts; too many flights of stairs.¹ These manifold causes suggest the manifold

¹ Here the Baltimore girls' high schools are the models, one flight only.

remedies. The remedies can be more easily and effectually applied in separate schools than in mixed. To remedy the evil in question effectually in mixed schools without too great laxity towards the boys is no easy task. Higher female education has come to remain. It is a new element in modern civilization. It is a great boon. It has been attended with a lamentable evil which has largely offset its blessings. Let the remedying of that evil be one of the chief tasks of all earnest promoters of higher female education.

Among the important imperfections of the high schools I reckon that of the programs. I arrive at this conclusion by a comparison of our high school programs with the highly perfected programs or courses of study (we use the words indifferently) of the French and German, including German-speaking Austria. The program does not make the school, but a good program is an important element of a good school. In general the classical course is too much lumbered up with extraneous matters not requisite for admission to college. This error causes a serious loss of time to the students by delaying their admission to college one or two years after they are old enough to enter upon the college course with advantage. A boy of fair abilities and proper age could fit for any college in Latin and Greek with proper instruction in two years without injury from overwork. Pedagogical authorities seem to be settling down upon the conclusion that in secondary education instruction in the classics should be mostly limited to construing and to translating with correctness and elegance. In the non-classical course there is an immense waste of time in attempting to teach the speaking and writing of the French and German languages, and yet the task is never accomplished to any purpose. Nor need it be for students in general. The necessity for speaking any foreign language is so exceptional that this acquirement should be reckoned as a specialty, to be learned, if at all, outside of institutions for general education. If, for instance, a young man is destined to a diplomatic career, he should be able to speak and write both French and German. But it would be a prodigious waste of time to pursue these studies in an ordinary school for secondary instruction. He should either go to the countries where these languages are spoken or to a school where they are the specialties. Every educated man, however, needs to know how to read with facility both the French and German languages. To a certain extent the preparatory course should afford this instruction, which should be continued in the college. In the non-classical course facility in reading an ordinary book in French or German should be a fundamental requisite. This could easily be done by pursuing a rational method and discarding all attempts to write or speak these languages, and especially all attempts to acquire what is called a Parisian or Hanoverian accent. In the first place these accents cannot be obtained in our schools and in the next place if they could be obtained they would be as utterly useless to ninety-nine and nine-tenths per cent. of our

pupils as the accent of the Choctaw language. An intelligible pronunciation, with due regard to the rules, is all that should be aimed at in such a course.

It is a noticeable fact that the number of girls in our high schools is in general quite in excess of the number of boys and that the number of girls who graduate is in still greater excess of the number of boys who graduate. Boys are too anxious, perhaps, to take a short cut to active business life. The average boy who has been kept in the grammar school until fifteen years of age looks upon the four-year high school course, which would carry him up to nineteen years of age, as too long for his purpose, and he is right. The case is different with the girls. What is required by the interest of the boy not destined to college or apprenticeship to a handicraft, but to practical business, is a non-classical high school course of three years, to which he can be admitted at thirteen or fourteen years of age.

In States having State universities, high schools are coming to receive State aid and some degree of direction and supervision by State officials. This highly important movement in the interest of high school instruction has for its object, primarily, to encourage the establishment and maintenance of free preparatory schools and to bring them into direct organic relations with the university. Minnesota has a high school board composed of the governor, the State superintendent of public instruction, and the president of the State university, *ex-officio*. The main functions of this board are to determine the qualifications of the teachers, course of study, and the standard of examination for graduation. Each school submitted to the direction of the board in these particulars receives a sum not exceeding \$400 from the State treasury. By the report of the board (1883), it appears that the board had under its supervision forty-nine high schools, with an enrolment of 2,417 pupils. The board obtained reliable information of the condition and progress of these schools by inspections made by the secretary and examiner of the board and by several members of the faculty of the State university, as they had been appointed. These inspectors have made careful inquiry into the thoroughness of the instruction, the facilities afforded in buildings, apparatus, and libraries, and have submitted written reports of their visits for the information of the board. There seems to be little room for doubt that provision for State supervision of high schools is needed, not only in States having State universities, but in other States as well.

The following modes of determining the qualifications of candidates for admission to high schools are those mostly in vogue, namely: (1) By competitive examinations, the number to be admitted being previously fixed; (2) by a pass examination, the candidates reaching a certain predetermined percentage being admitted; (3) the graduating diploma of the grammar school is accepted as evidence of qualification; (4) recommendation by the principal of the grammar school, but the

candidates are all admitted on probation; (5) by quotas sent up by wards or districts—example, Philadelphia. Of these, number 3 appears to be the most logical and rational.

EVENING SCHOOLS.

The evening school is the natural and necessary complement of the day school and is designed exclusively for persons who have passed beyond the age to which education in the elementary school is usually limited, namely, the age of fourteen years, and more especially for adults of both sexes. The initiative in the establishment and maintenance of the evening schools has generally been due, both at home and abroad, to the efforts of organizations outside of the public authorities, either charitable, religious, or educational. These agencies have rendered great service to the cause of education in various countries by thus supplementing the provisions made at the public expense for the instruction of the people. But experience has proved that the interests of adult education are too vast and important to be left wholly to voluntary effort for their support and management. Hence evening schools have become in various countries a permanent part of the public school system. In England more than thirty years ago a vast system of adult evening schools was established for instruction in elementary art and science as a means of promoting the very great industrial interests of that manufacturing country. In several of the continental countries the attendance of apprentices at supplementary schools, either on afternoons, evenings, or Sundays, is made compulsory.

The lowest and simplest function of the evening school is to afford to illiterate adults and youth who have passed beyond the elementary school age the means of acquiring the rudiments of knowledge, such as reading, writing, and the simple rules of arithmetic; but in our cities there is happily a rapidly increasing number of youth and adults engaged in industrial occupations during the day who desire to devote their evenings to the acquisition of knowledge, either industrial, as a means of promoting their success in their respective callings, or general, as a means of mental culture and intellectual development. Hence the demand for evening high schools, with both liberal and industrial courses of study, and evening drawing schools of different grades.

Evening schools for manual training and the teaching of the elements of the various trades might be useful in meeting the educational needs of still another class of pupils. In few, if any, of our cities do we find a completely developed and thoroughly satisfactory system of evening schools, although no little progress has been made in this direction during the last two decades. In many cities there are no evening schools of any description; in the class ranking next higher in the scale of progress some provision is made for evening schools by voluntary effort; in the next stage of development we find elementary public evening

schools more or less efficient; in a small class the evening high school is added; and finally the evening drawing school has begun to be adopted as an integral part of the public school system.

ELEMENTARY EVENING SCHOOLS.

The elementary evening school is necessary in proportion as the elementary day school has failed in the accomplishment of its legitimate object. Were all the pupils of proper age entered at the public elementary day school and continued through the course of its several grades, they would have no occasion afterwards to attend the evening school in order to learn to read, write, and cipher. The purely elementary evening-school, therefore, is a makeshift to supply a temporary want which will cease to exist as soon as the public school system becomes what it should be. In the mean time it is an actual necessity as the means of preventing illiteracy, so far as possible, among the youth who failed to acquire the rudiments of education during the school age, and of reducing to some extent the illiteracy of adult immigrants. The necessity of this class of schools is thus stated by the standing committee (Mr. John Shedden, chairman) of the Philadelphia school board:

The night school has become an actual necessity. Although the legislature of the State has been alive to its duty to the children of the Commonwealth, by the enactment of laws forbidding the employment in factories, &c., of children of tender age, yet, by the cupidity of some parents, the ignorance of others, and in many cases from financial necessity, the law of the State is openly violated at the expense of these helpless children. The night school is their only hope. There are persons holding eminent positions, useful to the community, that owe their educational advantages entirely to our night schools.

While the elementary evening school has been doing much good where it has been introduced, its results have very generally been far less satisfactory than could be desired. Where statistics are reported, the difference between the total enrolment and the average number belonging is shown to be very great, indicating that the average period of attendance is remarkably short.

The school statistics of St. Louis¹ show that for many years nearly one-third of the pupils enrolled each year attend less than twenty evenings and over one-half attend less than thirty evenings during the entire term of sixty-four nights. Moreover, the attendance of the actual members is usually very low; in Boston, for example, according to the report for 1881, the attendance reached only 54 per cent.

It would be unreasonable to expect in this class of evening schools the same continuity and regularity of attendance common in day schools; but experience has demonstrated that not only the imperfect attendance but other deficiencies of these schools are susceptible of remedy. The chief cause of their inefficiency seems to have been due to the inferior qualifications of the teachers employed in them. In

¹ Report of Superintendent Edward H. Long, 1881.

Boston the preposterous rule is in force prohibiting the employment in this service of any teachers holding positions in the day schools. Since the adoption of this rule the evening schools have too often been made the asylum of inexperienced and incapable teachers.¹ On the other hand, the Philadelphia board, finding that persons without experience as teachers were unfitted for the positions as assistants in night schools, adopted the rule that three years' experience as day school teachers be required of all applicants. It was found also that indiscriminate admission of pupils was followed by disorderly conduct and consequent waste of the public money. Accordingly, a rule was adopted "requiring that all minors applying for admission must be recommended by parent, guardian, or employer." These changes have produced the most beneficial results; the attendance has been improved and efficiency and good order have been greatly promoted.

The sessions of these evening schools are usually held for two hours, from 7 to 9, on three or four evenings each week during the winter term, beginning early in November and ending in the latter part of March, comprising about twenty weeks.

The success of these schools requires in the first place efficient principals and capable and experienced assistants. In the second place, they should be provided with good accommodations, and not be stowed away in damp basements, unventilated ward rooms, and dilapidated vestries. And then great attention should be paid to the classification of the pupils of these schools, so as to economize the teaching force as far as possible by substituting class instruction for individual teaching. As a means of encouraging the pupils to persevere in attendance and application to study it is desirable that the school should terminate with a public occasion and that on this occasion the meritorious pupils should be rewarded with medals, diplomas, and honorable mentions. At some of the evening schools in Paris it is customary to have such an occasion at the beginning of the term for the announcement of the awards for the term of the preceding year. I was present on one of these occasions which took place in the grand hall of the Trocadéro, which was packed with an interested audience of five or six thousand persons and presided over by a venerable senator and addressed by an eminent member of the Chamber of Deputies.

In some of the States, Pennsylvania and Massachusetts at least, the establishment and maintenance of elementary evening schools are made obligatory in certain cities and towns. In the latter State all towns or cities containing 10,000 inhabitants or upwards are required to make provision for instruction in evening schools in all the branches taught in the elementary day schools, including drawing, the history of the United States, and good behavior; "*and such other branches of learning*

¹ Since the above was written the Boston school board has, after an unsuccessful experiment, strangely persisted in for many years, abolished the rule excluding teachers of day schools from service in evening schools.

may be taught in such schools as the school committee of the town shall deem expedient ;" which means, of course, that the committee may set up evening high schools at the public expense if the funds therefor are provided by the municipal authorities.. This statute is of recent enactment, but its fruit is already beginning to appear. For example the superintendent of public schools of New Bedford¹ says :

When, a few weeks since, the new statute was partially applied in the south school, and pupils called for to make up a class in the higher grammar branches, some fifty young men eagerly presented themselves and have attended the sessions of the class very steadily ever since. This proves that there is a thirst for this kind of knowledge among those whom the statute is intended to benefit and that, when our evening schools shall be organized under attractive auspices, we shall have no lack of pupils.

It will be seen that the evening school of this description differs materially in character and function from the kind of elementary school we have been considering, being designed as a means rather of supplementing and continuing the day school course than of merely aiming to give the rudiments of instruction to the illiterate and to persons who may be ranked with the illiterate, and therefore comes more properly within the category of the evening high school.

EVENING HIGH SCHOOLS.

The evening high school is already an institution of no little importance in a number of the larger cities, and it has demonstrated by its results its right to a permanent place in the city systems of public instruction where the population is considerable; while the elementary evening school is most needed where the day school has been least successful in accomplishing its object, immigrant illiteracy left out of the account. On the other hand, the better the advantages of instruction in the day schools, the more completely they have succeeded in giving to all the children a thorough course of elementary instruction, the more the evening high school is in demand and the more largely will it be patronized. This consideration justifies the conclusion that the evening high school is not a temporary expedient, to be dispensed with in a more advanced stage of public instruction, but that it is an institution which has come to stay and that it has a more important future than can now be easily understood.

Cincinnati was perhaps the first city to incorporate this institution into her system of schools, something like twenty years ago, where it has continued to flourish and bear fruit. The requirements for admission are the same as those for admission to the upper grade of the grammar school course. In St. Louis there has long been an evening high school which is regarded as a preparatory department of the Polytechnic School of Washington University. The New York evening high school is a veritable college on a large scale and is conducted on the

¹Mr. H. F. Harrington, in report for 1883.

most liberal plan. The instruction is not confined to a fixed curriculum. The aim is to teach whatever branches the pupils wish to pursue. This school was opened in October, 1866, and has, during its eighteen years of existence, afforded larger opportunities for the acquisition of knowledge than any other school of this class in the country. The branches taught, as reported in 1883, are the following: Latin, history, political science, reading and declamation, English grammar and composition, German, French, Spanish, architectural, mechanical, and freehand drawing, penmanship, phonography, mathematics, arithmetic, book-keeping, chemistry, anatomy, and physiology. The number of applicants for admission was about 3,000, of whom 1,655 were found qualified for admission; average attendance, 951; number of instructors, 22. The average age of students was over twenty years. There were 69 students who did not lose a single lesson by absence.

Students who have made satisfactory improvement in their studies and who have not been absent more than fifteen evenings are entitled to certificates and those who have received three annual certificates are entitled to diplomas; 398 certificates and 49 diplomas were awarded at the close of the term.

The evening high school in Boston, which was established about twelve years ago, was uniformly successful until, in the reactionary movement in that city about four years ago, it was deprived of nearly all its high school studies. The result was that most of the pupils deserted it. It has, however, rapidly recovered its lost ground and is now larger and more prosperous than ever. At the present term (October, 1884), before the expiration of the time allowed for enrolment, the principal¹ reports 1,592 pupils admitted, classified, and in regular attendance, occupying to their full capacity all the school rooms in the vast block comprising the school-houses for the Latin school and the English high school.²

Considering the very large size to which both the New York and Boston evening high schools have grown, the time seems to have arrived when one or more additional schools of similar description should be opened in each of these cities. The convenience to the pupils would be thereby promoted, resulting in an increase of attendance.

These schools have certainly reached if not surpassed the highest limit of numbers allowable with regard to the greatest efficiency.

Brooklyn has taken a step in advance by establishing a *second* school of this class. As to the utility of the evening high school there seems to be but one opinion where it has been tried. If there is any class of persons for whom a city can afford to furnish free education it is that class of industrious young men and women who have neither the time nor means to attend a day school, but who are willing to devote their evenings to study. For my part I know of no sound argument for the

¹ Mr. E. C. Carrigan, a member of the State board of education, who fitted for college in part, in this school.

² The number has since risen to about two thousand.

maintenance of day high schools which will not hold equally good for the maintenance of evening high schools.

The evening high schools mentioned are confined to large cities ; but it may be predicted with tolerable certainty that this kind of school is destined to spread into cities of moderate size, and even into small cities. We find that the city of Lawrence, Mass., with a population of less than forty thousand, has already opened an evening high school. The superintendent (Mr. J. L. Brewster), in his report for 1882, says :

The evening high school meets in room 5, high school house, on Tuesday and Thursday evenings. It numbers eighteen gentlemen and ladies, most of whom have graduated from the grammar schools and wish to take some higher studies. Almost all pursue commercial arithmetic and book-keeping, under the class system ; otherwise they take algebra, geometry, or physics, as each individual may require. Mr. Richardson, submaster of our high school, teaches this school.

There is also a flourishing evening high school in Lowell, Mass.

EVENING TECHNICAL SCHOOLS.

The high schools we have been considering are no more technical or industrial schools than the day high schools, although they give instruction in some branches of direct practical utility, such as book-keeping, penmanship, and phonography. But purely technical evening schools are also needed. An interesting and important movement in this direction has been made in Philadelphia. For twelve years or more a school has been carried on for the benefit of artisans engaged in any of the numerous industries for which that city is famed. This school occupies the commodious building of the Central High School, and the models, diagrams, and chemical and philosophical apparatus belonging to that institution are placed at the disposal of the instructors for the illustration of their lectures. The principal and his assistants are members of the faculty of the Central High School. In the principal's (Prof. Z. Hopper) report for 1882, the course of instruction is thus described :

Four classes were formed in the general course, which included geometry, mechanical drawing, arithmetic, mensuration, chemistry, and natural philosophy. One of these classes was composed of men who had been members of the school during the preceding winters, and an advanced course was provided for this class. One class was formed for the study of architectural drawing and another class for the study of chemistry and natural philosophy.

The ages of the students were as follows: 132 of the pupils were from 18 to 21 years of age ; 42, from 22 to 25 years ; 25, from 26 to 30 years ; 21, from 31 to 40 years, and 8 were over 40 years of age. There were 52 occupations represented, of which the carpenters numbered 33 and the machinists 32.

This industrial school is, perhaps, the first representative belonging to our public school system of that large and increasing class of industrial evening schools which are found in the larger towns of Great Britain and continental Europe, of which the free and public evening courses,¹

¹ See Appendix A for sample program.

conducted under the auspices of the Association polytechnique (France), may perhaps be regarded as the type.

Who can doubt that industrial instruction of this description would be a boon to the artisans in all our important cities?

EVENING DRAWING SCHOOLS.

An act passed by the legislature of Massachusetts in 1870 made it obligatory for all cities and towns containing 10,000 inhabitants and upwards to make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day or evening schools, and at the same time authorized the towns containing a smaller number of inhabitants to provide such instruction.

By the operation of this law there are at the present time thirty-one cities and towns which are obliged to provide this instruction in industrial drawing, and this provision is made for the most part, if not universally, in evening drawing schools. Teachers for this department of instruction have been qualified in the State Normal Art School, which was established in 1873. No general report has been made as to the results of this instruction, and therefore information on the subject has to be sought in the school reports of individual cities and towns. The leading facts in regard to this instruction in a few sample cities are here presented. They are taken from such reports as happen to be at hand.

Lawrence.—Four schools; 4 teachers; 120 pupils. The schools are as follows: (1) A class in mechanical drawing on Monday and Thursday evenings; this class enrolls 64 members. (2) A class of 24 men in machine drawing; this is known as one of the second year's courses, and the members were prepared for their present work in the mechanical classes of previous years. (3) A free hand class of 24; there are several ladies in this class, and this department of drawing is a new feature in the evening schools and is still somewhat of an experiment. (4) An architectural class of 12 men meets in room 5, high school house, on Monday and Friday evenings. "The interest among the pupils was never better and the work done is excellent."¹

Taunton.—One school, divided into two sections; 6 teachers; whole number of pupils, 240; average attendance, 174; cost per pupil for tuition and current expenses on average attendance, \$6.41. Number in freehand classes, 141; machinery classes, 74; architectural classes, 15; perspective class, 6; modelling class, 15.

Worcester.—One school, 5 classes, 5 teachers, 255 pupils. The classes comprise one for beginners and one for advanced pupils in freehand drawing and beginners, and two advanced classes in instrumental drawing. "The pupils of the advanced classes are largely from the classes of previous years; the interest is steady and continuous and the prog-

¹Superintendent J. L. Brewster.

ress of the class as a whole is very satisfactory. The advanced class has had lessons in perspective and in drawing from life.”¹

New Bedford.—“A systematic course has been mapped out and the scholars [of the evening drawing school], as far as their education will permit, are following it.

“In this connection we would repeat a former suggestion that somewhere, either in the last year of the grammar school or in the early part of the high school course, the elements of geometry be so pursued as to enable boys wishing to become mechanics to make a better use of their time in the evening drawing school than they can now do.”² Average attendance, 21.

Bo ton hastened to comply with the requirement of the statute by opening, in the autumn of 1870, an evening school for industrial drawing, in spacious and commodious rooms, which were soon filled to their utmost capacity with earnest pupils. About a thousand applicants registered their names, a large proportion of whom could not be admitted for want of room. Upwards of five hundred pupils received instruction for a longer or shorter period. The total cost for the term was a little upwards of \$3,000. The school was a success from the beginning. “It is by no means a contrivance for teaching at the public expense an unimportant accomplishment to a few idlers and drones. It is a wise provision for furnishing the young artisans and skilled laborers in various crafts the technical instruction which they need, and which they cannot get except by means of schools of this description. Such an educational improvement as this, once introduced into this city, can never be abandoned, because it meets an immediate and pressing want of the times; the more it is known the more highly it will be appreciated.”³

Fourteen years’ experience has justified this assertion. The evening drawing schools have constantly grown in public favor and efficiency.

According to the latest report there were 5 schools, 13 teachers, and an average membership of about four hundred.

As the result of an examination of these schools in 1883, 17 partial certificates and 121 full certificates were awarded to students in the first year class, and 49 diplomas to members of the second and third year classes.

“The awards made at the annual exhibition of evening school drawings were as follows: Whole number, 77; of these 13 excellent and 18 honorable mention were given for first year drawings and 22 excellent and 24 honorable mention for second and third year drawings. The exhibition at which these awards were made was held early in June, at the drill hall of the new high school building, which proved to be an admirable place for the purpose; and the public distribution of the cer-

¹ Report of superintendent, Dr. A. P. Marble, 1880.

² Report of committee on drawing, 1881-’82.

³ Report of superintendent, 1871.

tificates and diplomas, which took place in the English high school hall, at the close of the exhibition, was a very interesting occasion. * * *

"The late important changes in the program of drawing for the evening schools has made the whole course more practical in character, the subjects of freehand and instrumental drawing being taught separately in two schools and the subjects of study in all of them made elective as far as possible. These changes, which were carried out during the past winter, have worked admirably well in practice, resulting in a better average attendance than hitherto, for the reason that students, finding the different courses of drawing better adapted to their actual needs as individuals, have attended more regularly and in much larger number through both terms."¹

The question of the continuance of these schools seems to have been settled beyond a doubt. Appropriations for their support are as much a matter of course as appropriations for the support of primary and grammar schools.

The great system of public instruction in the city of New York, so vast in its proportions and so excellent in very many of its features, does not, as yet, comprise independent evening schools for industrial drawing. This regrettable deficiency is, however, to some extent, though all too limited, supplied by the evening drawing classes taught in the Cooper Institute and by the provision for classes in architectural, mechanical, and freehand drawing in the admirable evening high school. If we look to the systems in the great cities of Brooklyn, Philadelphia, and Baltimore and those of the great western cities, we find a similar or, perhaps, even greater deficiency in this respect. We have no standard at home by which to measure this deficiency. What has been done in Boston is something real, but I regard it as only a good beginning and by no means a finality. One must go to Paris or Vienna for an example of what can and should be provided in a great city in this department of industrial education. In the latter city there are eight or ten large Realschulen and Realgymnasien conveniently located in the different sections of the city. In most if not all of these great institutions evening classes, numerous attended, are taught industrial drawing by accomplished masters. The instruction thus given leads up to the great industrial art school in connection with the magnificent museum of industrial art which was established some fifteen years ago at the expense of the government. I see no reason why New York or Philadelphia should be behind Vienna in public provision for instruction of any grade or description. Why should not the compulsory act of Massachusetts, in respect to this branch of technical education, be adopted by other States, especially those having important manufacturing interests?

¹ Report for 1883 of Mr. Henry Hitchings, director of drawing.

NORMAL SCHOOLS.

There is a constantly increasing demand for trained teachers. This demand is more marked in the cities than in the country. A very large proportion of the graduates of State normal schools find employment in the city schools; but the supply from this source is inadequate. Hence the city boards of a considerable number of the larger cities have made provision, more or less extensive, for the professional training of teachers for the schools under their charge. The supplementing of the supply from the State normal schools has not been the sole motive of making this provision. Another argument in its favor is found in the fact of the increased facility thus afforded to home talent for professional preparation. And, besides, it is generally believed that home-trained teachers may be better adapted for the service to which they are destined.

The establishment of city normal schools is by no means a new idea in our educational economy. It appears that the legal provision for the first city normal school antedates by about twenty years the establishment of the first State normal school. The city of Philadelphia took the lead in this matter. In the "Act to provide for the education of children at the public expense, within the city and county of Philadelphia," passed in 1818, it was made the duty of the controllers, who were intrusted with the administration of the schools, "to establish a *model school*, in order to qualify teachers for the sectional schools and for schools in other parts of the State."

A model school was organized in accordance with this provision and placed in charge of Joseph Lancaster, the principal promoter of the system of organization and instruction which bears his name. This was not only a pattern school, but it was, to some extent, a school of practice for the training of teachers in the organization and management of schools on the monitorial or Lancasterian plan. It was not until 1848, however, that this school was reorganized as a normal school according to the present idea of such an institution. Such were the ability and devotion of the first principal (Dr. A. T. W. Wright) and the sympathetic coöperation afforded him by the controllers that this institution took rank, almost from the beginning, as a model normal school. In respect to its course of study, its plan of training pupils in the school of practice, and its methods of instruction, it was little, if any, inferior to the best normal schools of to-day. When this was the only city normal school in the country Dr. Barnard, in giving an account of it, expressed the opinion that the reading of the admirable report of the principal, by city school officials, would lead to the establishment of similar schools in all the large cities. Since that time the number of city normal schools has been steadily increasing. In no city where the experiment has been tried to any considerable extent has it been abandoned, except in the city of Chicago.

We find among these schools not only a difference in name, but also

a wide difference in character. They may, however, be classed, with sufficient accuracy for our purpose, under four types of organization :

(1) The great City Normal College of New York, which performs the twofold function of a girls' high school and a normal school, without any recognized distinction of general and special courses in the curriculum. Its pupils are received directly from the grammar school. The course comprises four years and is mostly devoted to general studies. The Philadelphia school, as at present conducted, belongs to this type.

(2) The City Normal School, St. Louis, which is a purely professional school, with a course of training comprising two years. The pupils must be graduates of the high school or must possess equivalent qualifications. To this class belong the schools of Cincinnati, Boston, and Washington, D. C., and perhaps those of Indianapolis and Cleveland. In the schools of this class, except that of St. Louis, the course is limited to one year. This is the most completely developed type of normal school in the country, it being that in which specialization is carried furthest.

(3) The organization commonly designated as training school for teachers, comprising a practice school of several classes, taught by pupil teachers, under the direction of a training principal. These pupil teachers are usually selected from the most promising candidates for the position of teacher who are waiting for an appointment. The following account of the training school in Portland, Me., from the principal,¹ will sufficiently illustrate the organization and operation of this class of institutions :

The school [of practice] has numbered about 200 pupils during the past year and is divided into six grades. The work done in each grade is the same as in similar grades in the other primary schools in the city.

There are eight [pupil] teachers assigned to the practice school at the beginning of each year, and when a vacancy occurs by the removal of a teacher to another of our public schools a new teacher is appointed to fill the place. There are four rooms; in each room two teachers, one acting as principal and the other as assistant. When a change of classes is made, which is done every three months, the teachers who have acted as principals become assistants. Each teacher, during the year, gets practice in three grades. To give practice in more grades would be detrimental to the school.

The work of the practice class has combined theory and practice, or the study of methods of teaching and training in the practice school. Instruction has been given in the various subjects taught in the schools and in the principles of teaching. To avoid as much as possible the laborious task of note taking, Brooks's Manual has been used as a text book. The last part of the year was devoted to school economy. The class have remained an hour after school, at the close of the afternoon sessions, for these lessons.

In training schools of this class the pupil teachers receive little or no salary for their services. The cost, therefore, of carrying on the training school in connection with the school of practice is even less than the cost of carrying on the school used for practice in the ordinary way.

¹ Miss Sarah M. Taylor, report of 1881.

This fact renders the establishment of a training school a comparatively easy matter. Considering the cheapness and the great practical utility of this provision for the professional training of teachers, it is surprising that it has not been more generally adopted. There are probably less than a score of cities where this sort of a training school is to be found.

(4) District normal departments of high schools. Perhaps the most important department of this sort is that connected with the girls' high school of San Francisco. This department is composed of post graduates of the school. In some years the number of pupils in this department has been as high as 150. In consequence of the large number of high school graduates desiring to enter the normal department, the board, in 1882, limited the number to 56, admitting only those that ranked, at graduation, 80 per cent. or over. In 1883 the board continued a similar provision, limiting the attendance to 60. The course of instruction is one year. This department was established in 1876 for the purpose "of organizing a department which shall afford its members the means of preparation for the University of California and for the occupation of teaching."

From 1876 to 1880 the normal class maintained a precarious existence, opposed, as was to be expected, by the conservatives that oppose any new thing because it is not old and by untrained teachers that have an instinctive antipathy to skilled labor.¹

In the high school of Pittsburgh there is a normal department, though of quite an elementary grade. The pupils come directly from the grammar schools and pursue a two-year course differing not materially from the academic course, except in the substitution of instruction in the theory and practice of teaching in place of one or two branches in the latter course.

The diploma of this department is given by the city superintendent to such as make, at his examination, an average of 85 per cent. in each study of the second year. This diploma, by the law of the State, is equivalent to a professional certificate.²

In a number of important cities there are State normal schools which render the establishment of city normal schools unnecessary. The largest of these cities are the following: Baltimore, Providence, Trenton, Albany, Buffalo, Oswego, Salem, Mass., and Worcester. In some other cities there are normal departments in universities and colleges, which to some extent supply the place of city normal schools.

In some instances these departments have scarcely more than a nominal existence, differing from the other departments of the institutions to which they belong simply by the omission of a portion of the regular course and the substitution of a course of lectures on education.³

The New York board of education is required by law to establish a

¹ Report of Hon. John Swett, principal, 1883.

² Report for 1880 of the principal of the high school, Dr. C. B. Wood.

³ Report of the Commissioner of Education for 1880.

normal school or schools not only for those desirous of becoming teachers, but also for teachers, which shall be attended by such of the teachers in the common schools as the board of education, by general regulation, shall direct, under penalty of forfeiture of their situations as teachers by omitting to attend, which forfeiture shall be declared by the board of education.

In conformity with the latter requirement a school has been maintained for many years. It is held on Saturdays and those teachers holding the lowest grade of certificate are required to attend. The instruction has been mostly limited to the subjects required to be taught in the elementary schools.

The Ohio school law provides for the holding of an annual teachers' institute one week in the cities of the first class. In accordance with this provision an institute is held in Cincinnati during the week prior to the annual opening of the schools, which all the teachers of the common schools are required to attend. This institute is open to all persons who desire to become teachers in the common schools of Cincinnati. A certain quota of the State normal school fund is allowed for defraying the expense of such institute. The program of the institute for 1882 comprised the following subjects: Territorial history of the United States, the age of ice, anatomy and physiology of the eye and ear and why we use glasses, Westminster Abbey, our American poets, a question of to-day, Daniel Vaughn, talent and genius, arithmetic, orthography and language, physics, drawing, penmanship, music, language, reading as it ought to be taught, the new course of translation, object lessons, public examinations, self made men, and literature.

In Boston, for a number of years past, Saturday courses of lectures have been provided for the teachers, on the elements of the different departments of natural history, at the expense of Mrs. A. Hemenway. Other courses have been provided for by the board, on the methods of teaching the various branches in the common schools. Attendance on these lectures is optional.

The city normal schools are attended almost exclusively by female pupils. An exception is found in the Cincinnati Normal School, which reports three males in attendance. Those of the first and second categories are conducted by male principals. The Cincinnati school has a German department, under the charge of an associate male principal.

Special courses of lectures on the history and science of education, the theory and practice of teaching, and school hygiene have been provided for the public school teachers of Philadelphia. A very complete and comprehensive syllabus of the topics embraced in these courses has been prepared by Superintendent MacAlister.

In one important respect the city normal school has peculiar advantages, namely, in the provision for model schools and schools of practice. Some of the city normal schools, however, and particularly the training schools for teachers, are not so well furnished with this means

of training as could be desired, the school set apart for this purpose comprising, in too many cases, only the primary grade or some lower grammar classes in addition. They ought also to comprise pupils of each sex. Even so important a normal school as that of Philadelphia has only classes of girls in the grammar grade of its school of practice. Abundant proof of the excellence and success of schools of practice connected with city normal schools is afforded by the fact that parents are very generally anxious to secure places in them for their children.

The plan for the practical work of the students of the St. Louis Normal School includes four features: (1) Visits to the training school for the purpose of observation; (2) object lessons given to classes of children sent to the normal school once a week; (3) teaching a class in the training school, under the supervision of a critic teacher; (4) teaching in the place of absent teachers in any city school.

The study of city normal schools leads me to the conclusion that the type comprised in the second category, mentioned on p. 42, is the normal type of city normal schools. This is the purely professional type. It does not pretend to give academic instruction. It receives only pupils of mature age, who have successfully passed through the high school course of instruction. For admission to the most advanced schools of this kind the applicant must be at least eighteen years of age and must have completed a high school course of four years. In the State normal schools, as a general thing, in the East, at least, much the greater part of the course of instruction is devoted to academic studies. There being no distinct division between the academic and professional instruction, both are carried on simultaneously. There are those who contend that this is the ideal plan of the normal school. The argument in favor of this plan is based mainly on the assumption that normal pupils cannot obtain a good general education in non-professional schools, or, what amounts to the same thing, that a supply of normal pupils who have received the requisite general education cannot be had. But this assumption is not applicable to city systems in this country. The Cincinnati board of education can provide just as good general education for pupils in a school organized as a high school as in a school organized as a normal school, and so can any other city. The normal school forms no exception to the general principle that in all institutions of education both economy and efficiency are promoted by simplification of function. It is not strange, therefore, that the ideal type of the professional school for the training of teachers should be first developed in cities where candidates in sufficient numbers who have completed the high school course present themselves.

The history of the modifications of the provisions for the professional training of teachers in our cities, which have been going on during the last quarter of a century, makes it clear that the tendency has been and is now everywhere towards the purely professional normal school, with its school of practice, comprising pupils of all grades and both sexes,

thoroughly equipped and provided with teachers of the highest order, thus serving the purpose of a school of observation and a practice school.¹

The training school of the description referred to above—the most rudimentary type of the training school—takes its first step towards the ideal standard by employing regular teachers in its school of practice, thus leaving its pupil teachers, on the one hand, more time for theoretical study, and, on the other hand, affording them more supervisory direction and criticism in the class room.

In the New York and Philadelphia schools, where the general education and the special training are carried on simultaneously, we observe the gradual evolution of the distinctly professional department, composed of the post graduate pupils. As soon as such a department is clearly differentiated, as is the case with the normal department of the San Francisco school, it only remains to place this department under a competent master, wholly devoted to its management and training, and we have the realization of the ideal type of the normal school.

All competent authorities agree in the opinion that a course of special training in the theory and practice of teaching should be insisted upon as a prerequisite to the occupation of teacher. In no department of school economy is there a greater waste of the public money than in the employment of untrained teachers. No doubt very talented young ladies, with only a high school education, often do well, but with an added normal training they would do much better. My own experience and observation in the direction and supervision of normal schools, of all the different descriptions known among us, and of city schools, lead me to conclude that, during the first years of service, the trained teacher is worth about twice as much as the teacher who has had no professional training. No city can afford to employ untrained teachers. Limited advantages of training are better than none, and, as has been shown, the advantages of the rudimentary type of the normal school are easily within the reach of every city. This being the fact, it is not easy to see why our cities have not more generally availed themselves of these advantages. It appears by the latest Report of the Commissioner of Education that the whole number of cities reported in 1882 as having schools or departments for normal training was only twenty-one. The actual number was, perhaps, somewhat larger than this; but, all told, it is a small minority of the whole number.

It is a noteworthy fact, as evidence of the slow progress of educational ideas, that in some cities where normal schools have existed for years school boards still continue to refuse the graduates the recognition which is justly their due. In his report for 1883, the superintendent of schools of California remarks in relation to this matter as follows:

There is in connection with the girls' high school a normal class, where some sixty young ladies are prepared annually, at the expense of the city, for the profession of

¹For courses of study in the St. Louis and Boston Normal Schools, the reader is referred to Appendix B.

teaching. The teachers of the lower grades might all be taken from this class. To do so would be a long step in the right direction. Not to do so is to incur expense without a return.

The Cincinnati board, with glaring inconsistency, maintains a normal school and at the same time provides by a solemn ordinance that no preference shall be given to the graduates thereof in the appointment of teachers. In another city in the same State (Dayton), however, we find a sensible contrast to this strange policy in the following remark of the committee on the city normal school:

This is the most important department of our educational work. It is the centre, the very heart. Strength or weakness here will soon be felt in every district, grade, and room in the city, for from it most of the teachers come. * * * A favorable comment upon the workers and the work done in the past is that but two are without employment.

THE KINDERGARTEN.

The Kindergarten is a school for children from three to six or seven years of age, conducted, both in respect to discipline and instruction, in accordance with the method of training invented and expounded by Fröbel. The Kindergarten differs from the ordinary school both in its aim and methods. In the latter the work of the teacher consists in helping the pupils to acquire a certain amount of positive knowledge, and this is equally the case whether the knowledge taught is for its practical utility or as a means of culture: in substance, its method is the imposition of tasks; if the pupil likes it, well; if not, the obligation is the same. In the French pedagogical nomenclature, therefore, the word that stands for school task (*devoir*) is very properly the word that signifies duty. Even where courses and studies are optional, the method is the same, for, the course once chosen, performance of the tasks is exacted. The sole aim of the Kindergarten, on the other hand, is the development of the faculties, the communication of practical knowledge for its own sake being wholly ignored. Its method consists, essentially, in superintending and guiding the spontaneous activity of the child. The spontaneous activity of the child is manifested in play; hence its process consists chiefly in ingeniously contrived plays, requiring the exercise of invention, taste, and mechanical skill. It wholly excludes reading and writing, regarding the child as a *doer* primarily and as a *knower* subsequently.

The promoters of the Kindergarten differ more or less in their interpretation and application of the system of Fröbel. The chief apostle of the system in America excludes the employment of authority and discipline and the use of imitation as a means of culture and development, while in Vienna, where the Kindergarten has found more favor than in any other European city, authority in government and imitation in training are held to be essential elements in the system. In the normal Kindergarten of that city I saw the rod literally in the hand of the Kindergarten teacher. In America it is held that the number of children in the Kindergarten should not exceed twenty-five, and this is found to

be as many as can be well managed even by a first rate Kindergartner, who is not permitted to use authority in government. In Vienna it was common to find fifty children in a Kindergarten. These illustrations go to show that infant schools recognized as genuine Kindergärten are by no means the same in all their characteristics.

The Kindergarten has been introduced and maintained thus far in our cities chiefly through voluntary effort. The centres from which has radiated the influence in favor of spreading the system are Boston, through the labors of Miss E. P. Peabody and her sister, Mrs. Horace Mann; New York, through the labors of Miss Bölte, now Mrs. Kraus; and St. Louis, through the efforts of Miss Susan E. Blow. Private Kindergärten are now found in many cities and their number is increasing with marked rapidity. They consist, for the most part, of two very different descriptions:

(1) Those for children of wealthy parents. Speaking of the Kindergarten normal or training schools, Mlle. Loizillon, in her recent Report on the Kindergarten in America, says:

It is to be feared that, on account of the reception of children of the wealthier classes—who many times have been favored and spoiled at home—certain concessions will be made in the Kindergarten which may be opposed to the principles of the system, and, by introducing disturbing conditions, may have an unfortunate influence on the pupil teachers.¹

(2) The free Kindergärten, provided by individual or associate charity for the most indigent class of children. This charity is designed (in the words of one of the reports on the subject) “for the benefit of little children, too young to be admitted to the public schools, who, in winter, are often locked into their comfortless homes while their mothers are out at work, and, in summer, are locked out of them, exposed to all the corrupting influences of the streets and alleys.” The initiative has been made in establishing one or the other of these Kindergärten in a considerable number of our cities.

It appears by the Report of the Commissioner of Education that at least some beginning had been made in Kindergarten work in no less than twenty-eight States and Territories; that there were 348 Kindergarten institutions, with 16,916 pupils, taught by 814 teachers. These Kindergärten are nearly all private establishments, the exceptions being those belonging to the public school systems of St. Louis and Milwaukee. The school board of the latter city decided in 1882 to annex the Kindergarten to the public school system and opened a training school for the training of Kindergarten teachers. Mlle. Loizillon remarks that—

It is at St. Louis and at Boston that Kindergärten are found the most interesting to study, not only on account of their number and origin, but also on account of their organization and the unity which presides over their direction.

¹ Rapport présenté à M. le ministre de l'instruction publique, page 14.

The flourishing Kindergarten system of St. Louis owes its origin to the singular devotion and ability of Miss Susan E. Blow and the coöperating influence of the former superintendent, Dr. Harris. It dates from 1873. Such was the success that at the end of six years the number of Kindergärten increased to 53, with 196 teachers and an enrolment of 6,202 pupils. After so long an experiment on so large a scale, the eminent superintendent concludes an elaborate and sound discussion of the subject with the expression of the opinion that the advantage to the community in utilizing the age from four to six in the Kindergarten will ultimately prevail in securing to us the establishment of this institution in all the city school systems of our country. In the latest report at hand of the present superintendent (Mr. Edward H. Long), we find that there are upwards of 30 Kindergarten establishments, comprising 60 Kindergärten, each establishment having, as a rule, two Kindergärten, one held in the forenoon and one in the afternoon. They are taught by 231 teachers, of whom 178 are paid and 53 are unpaid, with an average membership of 4,515 and an average daily attendance of 3,926. It is evident, therefore, that in St. Louis the Kindergarten has conquered the right to be, and, moreover, the right to be a constituent part of the school system.

In the mean time the result in Boston has been quite different. The school board established an experimental Kindergarten simultaneously with the movement in St. Louis, in a good neighborhood, where it was eagerly patronized by well-to-do parents.

After this Kindergarten had been in successful operation for several years the superintendent,¹ having observed for one year its working, said in substance in his report that, whatever the Kindergarten *theory* might be, Kindergarten practice seemed to be defective in forming habits of attention and self control, and his conclusion was that the Kindergarten is rather a private charity than a public school. Accordingly, this experimental Kindergarten was closed and a charity system was inaugurated. This charity system owes its origin to Mrs. Quincy A. Shaw, the daughter of Agassiz, who alone has furnished the means for its support, with the exception of the use of a certain number of public school rooms allowed for its use free of rent. This charity now supports thirty Kindergärten, comprising 1,800 pupils, and is directed by a competent superintendent. These Kindergärten are located in the poorest sections of the city and have proved an inestimable blessing to the children for whom they are intended.

Considering the liberality in providing for education in our country, the general neglect in regard to infant schools is not easy to account for. One reason for it may be found, perhaps, in the fact that children of five years of age and upwards have been very generally provided for in the primary schools, and the margin below that age is rather re-

¹ Dr. Samuel Eliot, elected 1878.

stricted for the Kindergarten. And, again, it must be remembered that to furnish school accommodations to meet the demands of the rapidly growing population of our cities has so severely taxed the resources at command as to make it impracticable, as yet, to make provision for children of a more tender age. Nevertheless, the large study of city systems of instruction makes it evident beyond a doubt that provision, either public or charitable, especially for the benefit of indigent children, is an imperative necessity in all considerable cities, but more especially in those of crowded populations. In many foreign countries great progress has already been made in this direction. In Great Britain the infant school is universally regarded as an essential part of the public school system. The infant schools provided by the London school board are numerous and they are admirably installed in commodious buildings. Those visited by me a few years ago were accommodated in new, substantial, and well contrived edifices only one story in height. In England and Wales there were on the rolls in 1882 416,126 infants under five years of age, while in Scotland there were 114,267 enrolled upon the school registers, 25,987 of whom were instructed in infant schools proper.

In France, the infant schools, called maternal schools, a name which seems peculiarly felicitous, are perhaps more thoroughly and systematically provided for than in any other country. This province of education is organized into a complete system, with its normal schools, its hierarchy of teachers and inspectors, its program, and its legally prescribed provisions of installation. By a recent report it appears that there were comprised in this system 4,870 maternal schools, with 7,451 teachers and 621,177 children. Mlle. Loizillon, whose report is above referred to, is the general inspectress of these schools. The foremost promoter of improved methods of instruction and training in these schools was Mme. Pape-Carpantier, the most eminent female pedagogue of France, who directed the first normal school for the training of infant school teachers. She wrote numerous treatises on the subject. The international jury of the exposition of 1878 was only prevented from awarding her the highest honor for her services by her sudden death, which took place while the jury was in session.

In other countries, by voluntary effort or by public provision, especially in the largest cities, infant schools are more or less extensively maintained for children below the school age. Kindergärten proper are not perhaps very numerous, but the methods of Fröbel's system are making their way very generally into all the varieties of these infant schools.

STUDIES.

The old standard subjects of elementary instruction are uniformly retained, namely, reading, spelling, writing, arithmetic, grammar, geography, and history of the United States: comprising the trivium, or

three R's, of the ancient school for the people, and the quadrivium, which is the accession of a more advanced era, and yet an era preceding the modern school revival, dating back about fifty years. The last half century has witnessed a very considerable increase in the subjects of instruction. These subjects are object teaching, singing, drawing, gymnastics, vocal culture, English literature, natural history, physics, history of England, algebra, metric system, physical geography, physiology (including anatomy and hygiene), geometry and mensuration, book-keeping, astronomy, the German language, Constitution of the United States, general history, sewing, and perhaps some others. But there has been the greatest diversity with respect to the adoption of these additional subjects. In respect to some of them there has been a great deal of fluctuation and change. Some of them, the German language for example, have never been made obligatory, even where the provision for instruction in them has been the most extensive. There is probably no city system where all these subjects, at present, find a place in the program. Some of these subjects have come to be almost as generally considered essential as grammar and geography; among them may be mentioned object teaching, singing, and the elements of drawing. Algebra is probably now a less generally required branch than it was forty years ago. It is now on the optional list in New York, while it is obligatory in Philadelphia. But it is included in very few programs. In a few instances, the requirements are not the same for both sexes, a recognition of the fact that the destination in practical life of the sexes is not identical and therefore does not demand an identical education. In Philadelphia, English literature is assigned to the upper class of the girls' schools, while physics is assigned to the upper class of the boys' schools. It is evident that all these new studies cannot be added to the old curriculum without greatly extending the period of elementary instruction or restricting them to very narrow limits. The attempt to introduce too many of them without providing for the necessary limitations in respect to matter and methods has resulted in too many cases in serious evils, such as cramming, the overwork of pupils, and the want of thoroughness in teaching. All these subjects are desirable, but not equally desirable, in an elementary education.

The remedy for the above evils, which are always greatly exaggerated by the enemies of the schools and sometimes by their friends, is not that which is most commonly proposed by hostile and unwise critics, to throw overboard everything but the three R's. The true remedy consists in eliminating a few of the subjects which belong more properly, perhaps, to the high school course, in rigorously limiting the matters to be taught under each head to the requirements of elementary instruction, and in employing the most rational and concentrated methods of teaching. If English literature and algebra be omitted from the list it would be practicable, by the wise and thorough application of the remedy here proposed, to teach all the subjects, both of the old and the

new curriculum, to good purpose without overtasking teachers or pupils. The problem is to know how to do it. This is, perhaps, the problem of problems for the superintendent.

In considering the subject of studies we come into view of the irrepressible controversy in the educational world, the combatants being on the one side the representatives of the aristocratic sentiment and on the other of the democratic. The democratic sentiment is always seeking to widen the base and elevate the standard of the education of the masses. The sentiment of aristocracy, while admitting the utility of giving the masses the rudiments of learning—the old trivium—is always in hostile array against every attempt to advance beyond that minimum. This conflict has been confined to no age or country. It goes on equally under republican and monarchical governments. On the aristocratic side it is beginning to be seen that, with modern improved methods, children cannot be employed on the old subjects alone if they are kept in school regularly during the proper elementary school age. It is therefore claimed by some that it is better for the masses of children to be kept in school only half of the time. But whole-time schooling and a generous curriculum being the evolution resulting from the advancement of the sentiment of democracy, they can be permanently set aside only so far as that sentiment is vanquished and crushed out. The desirable thing to do is not to reduce greatly the subjects of instruction, but to deal with them more wisely in the use of methods and in the framing of programs.

SUPERVISION.

In nearly all cases the school board is aided in the care and management of schools by a superintendent. This officer generally depends on the board for his election and acts subject to its control. He is selected as an educational expert, having usually received a liberal education, having had successful experience in teaching, and having acquired, by observation and study, information more or less extended as to approved methods of instruction and school economy in its various departments. He is required to devote himself wholly to the interests of the schools under his charge. His tenure of office is precarious, being subject to an annual or at best a biennial election. Perhaps in a very few exceptional cases the period of tenure is a little more extended. The salary in general does not differ materially from that of the principal of the high school, though probably in the majority of cases it is somewhat higher. In a few cities no superintendent is employed, the entire supervisory and directing service being performed by the members of the board. Such cities are justly regarded as being behind the times. Until recently the great city of Philadelphia belonged to this exceptional category. There are still belonging to it three cities of considerable importance in Essex County, Massachusetts, ranging in population from 13,000 to 27,000. In a vast majority of the cities a single

superintendent is employed. In all the cities of the first class, however, with possibly one exception, one or more assistant superintendents are employed. The number of assistants in New York has risen to seven. In cities of the second class, also, assistant superintendents are beginning to be employed.

The duties of a superintendent are prescribed by the board, and are usually set forth in considerable detail in the rules and regulations. He is commonly regarded as the chief executive officer of the board, although this idea of the functions of his office is seldom, if ever, declared in prescribing its duties. The essential duties of the office are everywhere substantially the same, although in matters of detail there is considerable diversity among the city systems. The first permanent city superintendency was established in Providence in 1840. The duties prescribed for this officer I have not the means of knowing. One of the first cities to follow this example, although at a distance of more than a decade, was Boston, and at the head of the list of duties prescribed for the new officer was this:

He shall devote himself to the study of our school system and of the condition of the schools, and shall keep himself acquainted with the progress of instruction and discipline in other places, in order to suggest appropriate means for the advancement of the public schools of this city.

Thus clearly and definitely was enunciated at the outset the highest and most characteristic function of the city superintendent as a professional expert in matters pertaining to public instruction. The supreme importance of this requirement has very generally been recognized by school boards in prescribing the duties of this official.

The duties of superintendents vary considerably according to the size of the system in charge; but personal supervision of the instruction and discipline and of the internal economy and management of the schools are the common requirements of superintendents in cities of all classes. In the smallest cities, the superintendent, being the only agent of the board, is necessarily a man of all work. He not only acts as adviser of the board and of its individual members and supervises, inspects, and examines the schools, but he has to provide, under the direction of the board, for all the material wants of the school. He superintends the repairs on the school-houses and assists in devising plans for new ones; he attends to the providing of fuel; he procures and distributes the supplies, not only of materials and apparatus for instruction, but also brooms, mats, dippers, and such like; audits the bills; prepares the pay rolls of teachers; acts as the secretary of the school board, and makes an annual report exhibiting the progress and condition of the schools. The usefulness of an energetic officer in such a situation, with the versatility of talent requisite for such varied duties, can scarcely be overestimated. In cities of a larger size, the specialization of the executive work is begun by the employment of additional agents for such branches of service as do not require the qualifications of an educational expert. This

specialization goes on with the increase in the size of cities, the functions of the superintendent being correspondingly restricted until, in the very largest cities, as in New York, for example, his duties are mostly limited to what pertains to instruction, discipline, and school management. And even here—that is, in the large cities—we find again further specialization, not only in the employment of assistant superintendents, as above noticed, but also in the employment of special experts, as superintendents and directors of certain branches of instruction, such as modern languages, penmanship, drawing, gymnastics, singing, vocal culture, &c., these specialists being of course subordinate to the superintendent.

The one specific and comprehensive duty expected of every superintendent is to see, so far as practicable, that all the rules and regulations of the board are faithfully observed, not only by the pupils, but by all teachers and employes within the sphere of his authority.

A further analysis of the subject shows that city systems differ, not only in the range of the duties assigned to the superintendent, but in the very considerable diversity which exists in respect to the degree of power and authority with which this officer is invested; and this difference in respect to the limits of power is found to exist even where the sphere of duties is substantially the same. For instance, the superintendents of Boston and St. Louis are alike chiefly occupied with matters pertaining to instruction and school management, but the superintendent of the latter city practically exercises much larger powers than the superintendent of the former. He performs the duties and exercises the powers to a large extent which are assigned in the former, and indeed in most cities, to subcommittees on individual schools or districts. In connection with the committee on teachers he nominates candidates to fill vacancies in the corps of teachers and transfers both teachers and pupils from one school to another, and this means that practically the chief responsibility of this important part of the administration is in his hands.

In Boston, a few years ago, an exceptional and indeed quite abnormal provision was made for supplementing the supervision of the superintendent, which requires a brief notice. This provision consisted in the creation of a board of six supervisors, the superintendent being ex officio chairman. To the individual supervisors certain duties of supervision were assigned, in the performance of which they were responsible neither to their own board nor to the superintendent. Again, certain duties were assigned to the board, the examination of candidates for teachers, for example, irrespective of the superintendent, excepting his right to vote as the presiding officer of the board.

The individual supervisors were clothed with authority to prepare annually a schedule of the merit and standing of each teacher, as a guide for the school board in the annual election of teachers, subject to no control by the superintendent. The board of supervisors submitted

an annual report on the condition and working of the school system, with recommendations as to the policy to be pursued, wholly independent of the report required of the superintendent. The practical working of this strangely anomalous and whimsical contrivance was what any unbiassed, practical man would naturally expect. There was no longer a responsible head. If the superintendent attempted to assert and maintain his prerogative as superintendent in chief the result was a conflict. If he accepted the situation, the superintendency became only a seventh supervisorship. Necessity has at length compelled some modifications of this unwise system of supervision, and the superintendent has been formally declared by the school board to be its chief executive officer, with some authority in directing the labors of the supervisors. As this scheme is without precedent, so it is believed it will have no imitators. The plan of assistant superintendents, after the pattern of New York and the other large cities, is the only rational mode of reënforcing and supplementing the one man superintendency.

There is no longer occasion to seek arguments to prove the expediency of employing expert supervision of city systems of schools. The day for that service to the cause of education is in the past. That the superintendency has been the most effective instrumentality in bringing about the existing advanced condition of things in our city systems is beyond a doubt. Men of exceptional ability and devotion have been employed from time to time, in some cases for a series of years, in the more conspicuous situations in different sections of the country. These men, by their practical wisdom, their indefatigable labors, and their unselfish devotion to the best interests of the schools under their charge, have afforded noble models for imitation, whose widespread influence has largely inspired and shaped city supervision throughout the country. In a large number of less prominent positions, and even in humble places, superintendents possessing in no small measure desirable qualifications have been secured and retained for a longer or shorter period. But we are a long way yet from perfection in the matter of supervision. Too many school boards, through incompetence or indifference to the public interest, have employed superintendents of inferior qualifications. Incompetent teachers and inefficient schools are the inevitable result. Like produces like: as is the school board, so is the superintendent; as is the superintendent, so are the schools. It is hardly too much to say that the chief use of school boards is to get and retain and sustain good superintendents. Forty years ago there were no city superintendents, or next to none. Instruction in city schools then was scarcely better than instruction in country schools. The immense superiority of city instruction over country instruction at the present time is due mostly to the introduction of supervision. But the capabilities of this instrumentality have thus far been but partially utilized. Public sentiment should hold school boards to the strictest accountability in the choice and treatment of superintend-

ents. Fifty years ago the Dutch common schools were the best in Europe; and Cousin, in stating that all authorities agree in attributing this superiority to the exceptional excellence of the supervision, relates that the venerable Van den Ende, who had been the chief administrator of the system for twenty-seven years, said to him, "Take care how you choose your inspectors; they are men whom you ought to look for with a lantern in your hand." The French philosopher, in framing the French system, spared no pains in providing for a competent inspection. And twenty-four years ago, Matthew Arnold, in speaking of the French system said, "The primary inspectors are the very life of the system; their inspection is a reality." During the last quarter of a century the supervision in France has been greatly improved and strengthened, and it is at the present moment more than ever the "sinews" and life of the system.

The question with us, then, is no longer whether superintendents shall be employed, but how to get the best, how to utilize their abilities, how to organize supervision. I consider the New York plan of supervision an excellent model for a large city. The first talent must be invited to this all important field of activity by rendering the status of the superintendent more desirable. The superintendents of the past have had to do much rough, pioneer work. Their tenure of office was precarious. In too many cases they had to fight for the very existence of the office which they held. My predecessor in Boston was severely crippled in his efforts and finally driven to resign by the bitter and persistent opposition of members of the board bent on abolishing the office. In the earlier days of superintendency many a worthy officer encountered similar opposition. They were baffled, hampered, and humiliated. They had to make bricks without straw. They had to build the walls with the trowel in one hand and the weapon of defence in the other. The tenure of office of superintendents should be rendered more stable. Perhaps it would be well to make their removal depend upon the concurrent action of some superior authority. They should be invested with powers adequate for the accomplishment of the ends in view. Certainly the inducements for men of ability and culture seeking a career of large usefulness to enter this service are far greater than they were two or three decades ago. My opinion is that we have already entered upon a new epoch in this respect. The recent creation of the office of superintendent in Philadelphia and the mode of proceeding in filling it are, in my view, a cheering omen. I am inclined to agree with the eminent pedagogue, Dr. G. Stanley Hall, in the following sentiment expressed by him in a recent able article in the *North American Review* :

There is now no line of intellectual work to which a young baccalaureate can devote himself with greater certainty that industry and ability will find their reward in usefulness, reputation, and position than to the professional study of the theory and history and institutions of education.

And what our cities want more than anything else to insure their future educational progress and success, is a full supply of supervising agents who have had the advantages of such a course of training. The men of the future can hardly be expected to excel the men of the past in practical sense, in earnestness of purpose, or in abundance of labor; but they must be men of broader culture, of wider scope of mental vision, of deeper philosophy, and they must be far better equipped with the knowledge of pedagogical science and pedagogical history. Facilities for obtaining the requisite professional knowledge have heretofore been wanting. A capital beginning has been made, however, in supplying the needed facilities by the establishment of chairs of pedagogy in the Johns Hopkins and Michigan Universities and in some other institutions of superior instruction of less prominence.

It is greatly to be desired that similar chairs of pedagogy should be instituted at Harvard, Yale, Columbia, and indeed at all the principal universities throughout the country.

It has been charged that the supervision of the present day is too much occupied with the "perfecting of the machine;" that it magnifies the importance of the mechanical and routine operations of the school; that it mistakes the means for the ends; that it is too busy about the non-essentials; that it insists too rigidly upon uniformity in methods and results; that it treats pupils en masse and ignores individuality; that its preposterous programs and perpetual examinations are only contrivances for facilitating and enforcing cram, instead of means for promoting profitable culture; and so on to the end of the chapter. That there is a tendency to such faults is, perhaps, true. Some of them may even be quite prominent in certain localities, and others in certain other localities; but sweeping assertions as to the general existence of this array of faults in the supervision, at least to any marked extent, seem to me unjustifiable, and when made they seem to be due either to ignorance or ill intent. But, whatever may be the actual defects in our supervision, the remedy is not to be sought by reckless and indiscriminate criticism, but by the gradual process of training and bringing into the service the most capable and thoroughly equipped superintendents.

I have here a remark to make about the "machinery" of our systems, which of late has been a favorite subject of criticism, especially among amateur educational reformers. They complain that too much attention is paid to the perfecting of what they call the "machine;" that the "machine" is already too perfect; and, in fact, that the perfection of the machinery is its peculiar demerit, and that this excess of perfection is one of the chief evils to be reformed. They tell us, further, that the present and past generations of superintendents, who have worked up this machinery to such a state of perfection, have been for the most part but "hewers of wood and drawers of water;" that the men of the future must ignore this mechanical business and give their

attention to what is more intellectual and spiritual. I have no objection to make to the demand that supervision should largely occupy itself with what is intellectual and spiritual. But what I have to say is this: The application of the terms *machine* and *machinery* to a school system has no meaning whatever unless these terms are intended to mean what we commonly designate as organization; and organization is nothing more than a system of arrangements whereby means are adapted to ends for the production of the desired results. This is too plain to be disputed. This being the case, it is obviously quite impossible to make the so called machine or organization too perfect; for it is certainly impossible to adapt means to ends too well. The plain fact is that the great and undisputed success of our city systems is the result of their good organization. The imperfections in the results (and they are not denied) are due not to the excessive perfection of the organizations, the adaptation of means to ends, but to precisely the opposite cause, namely, the need of still further improvement in these organizations. It is true that organizations can do nothing without the agency of living actors, but in the ultimate analysis there must be organization of action as a means of securing these agents: and the more perfect the organization the more success in securing agents of the right stamp.

I conclude my observations on this topic by a brief reference to some of the characteristics of the policy of two classes of superintendents, the one standing at the top of the roll of honor and the other at the bottom.

The typical superintendent of one of these classes is the true reformer. He regards nothing as done while anything remains to be done; but he never goes to extremes. He believes that wisdom consists largely in moderation, and so his model school is that in which nothing is pushed to excess and nothing is neglected; that in which nothing is overdone and nothing is underdone. He is fruitful in expedients, but not in experiments. He is never content with things as they are, if he can discover a chance for improvement. He has the capacity to profit by the experience of others, and so spares no pains in making himself acquainted with the best things that have been thought and done touching the business in hand. He has the courage of his convictions and holds firmly to what he believes to be good. His aim is to produce better results with each passing day. But while doing his best to administer the system in the most effective and judicious manner he is simultaneously carrying on another work; I mean the development and perfecting of the system itself. With this end in view, he always has some project in hand: the establishment of a training school for teachers, an evening school, or an industrial school; the adoption of a better method of examining and certificating teachers; a plan for aiding and encouraging teachers in self improvement; provision for instruction in sewing; an improvement in the plan of constructing school-houses; the devising of a more rational program and a more rational system of school examinations. In this line of effort he

is creating new instrumentalities, each of which, when once put in operation, goes on indefinitely, contributing its addition to the good results of the system as a whole. In this sphere of his labor he incurs risks, for it brings him more or less in conflict with the views of members of his board; but this risk he accepts, trusting to time for his justification.

The typical superintendent of the other class is of a different character. He is considerably in earnest and displays no little activity and industry in supervising and directing the minor details of the business. His supreme ambition is to carry on the routine operations of the system with as little friction as possible, and with this end in view, he virtually says to his board, "I am here to obey your instructions. Tell me what to do and I will do it with alacrity and delight." He means well, is fairly intelligent, and has a sincere desire to make himself useful; but he does not possess the qualities of a chief, of a leader, of an organizer. His forte lies in obeying rather than in directing. He performs a good deal of useful drudgery under the direction of the committee. His reports are meagre in valuable information, either statistical or of any other description, about the schools. In place of pertinent facts and suggestions, he substitutes rather commonplace generalities, the correctness of which no one would think of calling in question, winding up with the assurance that, thanks to the wisdom of the board and the faithfulness and ability of the teachers, the schools have made commendable progress and are in better condition than ever before. All are highly gratified to be thus assured and are highly content with their amiable and industrious superintendent.

PROGRAMS.

It is the function of the program to indicate the succession or order of the several studies, to assign each class its group, and to mark definitely the standard to be aimed at in each stage of the course. Some programs indicate the work for each quarter, some for each half year; but, for the most part, they divide the work into stages requiring one year's work each. The program, the methods, the examinations, are interdependent factors in school economy. The examination should aim to conform to the program, while it is, in effect, an authoritative interpretation of the program which the teacher feels bound to accept; moreover, it necessarily influences the method. The program indicates and determines to a greater or less extent the method, while the method must be taken into account in estimating the time to be allowed for any subject. The program is an essential instrumentality in the graded system involving promotion and graduation as the result of test examinations. Only a few years back the program was, in general, nothing more than a list of text books prescribed for each class. At that period systematic examinations were rare; the work in the lower classes was

uneven, teachers and pupils being alike slaves to the text book, and the condition was aggravated by the excessive voluminousness of the text book. All that is now changed. But the change has brought along with it a new set of evils. The programs of the present day scarcely refer to any text book whatever. Under the old régime the teacher found it impossible to master the whole text book and was quite at a loss to know what to omit. Under the present régime, where subjects and topics only are named, the teacher is equally puzzled to know what to include. The middle course would seem to be the more judicious and practicable. By the middle course I mean reference, to a considerable extent, to text books as a means of indicating the limitations of the studies, always assuming them to be of the right description. I know of no other practicable means of indicating the necessary limitations in respect to the more substantial branches of instruction. In the attempt to indicate the limitations independently of text books programs have grown out of all proportion. A program from a small western city was found at the Philadelphia Exposition, which was swelled to a good-sized octavo volume. It was, in fact, a series of condensed text books.

A famous school in Paris, with ample means, solves the problem by compiling and publishing its own text books in parts corresponding to each class or grade in the whole course, this series of text books being the program.

That the programs of the present day are greatly overcharged, I have no doubt; but this overcharging, in the immense majority of cases, does not consist in the multiplicity of subjects, or studies properly so called, but in the multiplicity of topics whose limits are not indicated and cannot be indicated without swelling the programs to quasi text books in each branch. As an illustration of my meaning, I insert here in full a program for the first term (first third of the year) for the lowest primary pupils (that is, pupils on their first entrance into school), taken at random, without any attempt to find an extreme case. It is, in fact, the program in a small but important city west of the Mississippi:

Reading.—Use charts of blackboards; words to be first learned, then their phonic elements; lastly building words by sounds. Use both script and printed forms of words, beginning with script. Observe the following order: (1) The idea represented by the word to be learned. (2) The word as a sound and its correct utterance by the pupils. (3) The word as a form: its recognition at sight. In selecting words to be learned, observe the following order: (1) Names of objects. (2) Action words. (3) Qualities. (4) Other words. The names of letters to be learned as fast as introduced in the chart lessons.

Oral reading.—Spell by sounds and by letters all words learned in reading lessons.

Writing, on slates and blackboard, at dictation, words in reading lessons. One side of the slate should be ruled by the teacher. Pupils to use long pencils and to hold them in a proper manner.

Drawing.—Inventive drawing. A few straight lines to be given the children, from which to form such figures as their ingenuity may invent. Also Kindergarten method and Thompson's system.

Numbers.—Clear and ready perceptions of numbers from one to five, to be developed with use of objects. All possible additions, subtractions, multiplications, and divisions of integral numbers to be learned within each limit, as it is reached.

Exercises in rapid reckoning to be given at every step. Also concrete problems. Meaning of $+$ $-$ $\times$ $\div$. Learn to write these numbers in script, Roman, and Arabic characters. Pupils may learn to count without objects.

Lessons on common things.—(1) Objects in school room: Chair, slate, pencil. (2) Parts of the human body: Head, face, &c. (3) Domestic animals: Dog, cat, &c. (4) Clothing: Hat, bonnet, &c.

Language lessons.—Systematic correction of common faults in speech to be continued throughout the year. Form short sentences, incorporating given words. Answers to be given in full sentences. The use of the period to be taught; also, the use of capitals at the beginning of sentences.

Vocal music.—Singing simple songs. For scientific instruction, see Blackman's Graded Songs.

Morals and manners.—Inculcate reverence and love for God, obedience to parents and teachers, and a kind and forgiving spirit towards brothers, sisters, and school-mates. Guard against rudeness and suppress profanity and the use of vulgar language.

Physical exercises.—Free gymnastics, a few minutes every hour, or as often as the pupils become weary of other employment. Vocal gymnastics. Require the pupils to sit and stand erect.

The author of the above seems not to have been influenced by the maxim "Too many things at once is no better than too much of one thing."

The New York requirements for the first stage, that is, first half year, are far more moderate and rational:

FIRST HALF YEAR.

Reading and spelling.—Familiar words and simple sentences from blackboard and chart; also, spelling such words from dictation. Exercises in elementary vowel sounds and in consonant sounds in combination with vowels.

Number.—Counting and adding by ones to 100, by twos and threes to 50; also, counting backward by ones from 10; *Arabic figures* to be read to 100 and written to 20.

Object lessons.—Form, such as square, oblong, circle, cube, ball, or sphere; straight and curved lines; common colors; and the obvious parts and uses of familiar objects.

Drawing, on the slate, taught from dictation illustrated on the blackboard, from dictation without illustration, and from copy.

Position and inclination of straight lines, triangles, letters.

Straight lines: Vertical, horizontal, and oblique. Angles: Right, acute, and obtuse. Letters of the alphabet which can be formed from straight lines. The triangles named from their angles: Right, acute, and obtuse. Common objects represented by straight lines without perspective effect.

The following are the general requirements applicable to all the classes of the primary school, and, of course, forming a part of the program for the sixth class:

Vocal music.—Instruction in vocal music shall be given to the pupils in every grade. The music used shall be such as is found in the books contained in the supply list of the board of education.

Physical training.—The pupils should be exercised daily in such a manner as to expand the lungs, develop the muscles, and impart an easy and graceful carriage to the body. Calisthenic exercises should be employed for the attainment of these objects.

Manners and morals.—Such instruction should be given daily to the pupils of all the grades as will foster a spirit of kindness and courtesy toward each other, a feeling of respect toward parent and teacher, and a love of cleanliness, order, law, and truth.

The absence of uniformity of text books in New York renders it impracticable to refer to particular text books in the program, while, on the other hand, the system of examination described under the head "school examinations" greatly diminishes the necessity for such reference, as it is calculated to afford every teacher the needed interpretation of the program.

For the sake of comparison, it may be well to introduce in connection with the above specimens of the present day a representative one of an earlier date. About thirty years ago the Boston primary school system was reorganized and a new program adopted, from which the following is quoted :

FIRST HALF YEAR.

My Little Primer or My First School Book, at the discretion of the teacher. (1) Pronouncing words without spelling; (2) pronouncing and spelling combined; (3) spelling without book words that have become familiar; (4) counting from one to one hundred; (5) drawing on the slate or blackboard, imitating some mark, letter, or other object, or copying from a card.

My First School Book was a small child's first book, combining reading and spelling lessons. Only a beginning of this book was to be made the first six months, being continued another whole year as the only reading book and a year and a half longer as the only spelling book. As meagre as this program was, it was seldom accomplished in the specified time, owing to the imperfection of methods and classification.

The limits of space will not permit the introduction here of an average program of the elementary course in its entirety; but, as it was deemed necessary for illustration to present samples of programs for the first or lowest stage of the primary grade, room must be taken for specimens designed for the highest grammar grade. The first specimen presented is from the Philadelphia program for the year 1882. This can hardly be regarded, however, as an average specimen. It appears to me to belong to the more extreme class, both in respect to the range of studies and to the requirements under each.¹ The program from which this is taken antedates the creation of office of superintendent of schools in Philadelphia.

FOURTEENTH GRADE (SECTION A)—TIME, 10 MONTHS.

LANGUAGE.

Reading and elocution.—Vocal culture; declamation; recitations and dialogues; explanations and drill exercises.

Spelling.—(1) Constant attention to spelling; to accent and pronunciation; to marks; to rules for spelling; to dictation exercises. (2) Classes of words, as simple and compound; primitive and derivative; monosyllables, dissyllables, trisyllables, polysyllables, syllabication.

¹ This course of study has very recently been materially modified at the instance of the city superintendent, Mr. MacAlister.

Definitions and etymology.—(1) The meanings and the uses of words generally explained and illustrated; the dictionary. (2) The etymology or derivation of words generally; their literal and their accepted meanings compared; their analysis; attention to words of historic importance or nature; formation of words from given roots.

Language lessons.—General review of important definitions and principles. (1) Further explanation of the subjunctive and its proper use; the progressive form; idiomatic uses of the verbs, modes, tenses, pronouns; correction of false syntax; parsing; sentence making. (2) Classes of sentences, clauses, and phrases carefully reviewed; qualifiers of subject and predicate further explained; analysis and construction of sentences. (3) Compositions, letter writing, abstracts from reading and other lessons; transposition from poetry to prose; important general principles and rules for punctuation.

English literature.—For pupils of senior department for girls. Literature; prose and poetry; kinds of each; different periods of literature of England; of literature of America; brief historical sketch.

Brief biographical sketch of the following authors, their important works, nature of their writings, extracts, analysis, and criticism: English: Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Addison, Goldsmith, Johnson, Byron, Wordsworth, Scott, Tennyson, Macaulay, and Dickens. American: Edwards, Franklin, Jefferson, Bryant, Longfellow, Whittier, Lowell, Holmes, Irving, Prescott, Bancroft, Motley, Cooper, Hawthorne, Webster, Emerson, and Agassiz. Other authors, so far as time may permit.

MATHEMATICS.

General review of important terms, principles, and methods.

Mental and written arithmetic.—Continued applications of percentage in partial payments, taxes, duties, or customs, exchange, average of payments, partnership, analysis, metric system, business calculations.

Geometry and mensuration.—Terms and definitions; plane geometry of lines, angles, triangles, quadrilaterals; proportion, and proportion applied to plane figures. Terms and definitions in mensuration; problems to find solidity, surface, and the several dimensions of the rectangular solids, the pyramid, the sphere, and the cone; general principles of geometry involved, and construction of necessary figures.

Algebra.—Terms, definitions, and principles; simple equations involving two or more unknown quantities of the first degree, quadratics, proportions and progressions, involution, evolution, surds.

WRITING AND DRAWING.

Writing.—Charts; formation and analysis of letters; copy book.

Book-keeping and business forms, &c.

Drawing.—(1) Plane geometric drawing with instruments continued; simple applications of geometrical problems in construction and decoration, using for design simple conventional details of plant forms; two original designs. (2) Historic ornament; rectangular and cylindrical solid objects from copies; dictation and memory exercises.

GEOGRAPHY AND HISTORY.

Physical geography.—(1) The earth as a globe: its form and dimensions; the (probable) condition of its interior; its surface (as land, water, atmosphere). (2) The earth as a planet: Form; rotation and its effects; revolution and its effects (theory of seasons); imaginary circles; maps and map projections. (3) The natural divisions of the earth: (a) Land, including continents, islands, peninsulas, capes, mountains, table lands, plains; (b) water, including oceans, seas, gulfs or bays, straits, lakes, and rivers. (4) Land: The structure of the land; the interior and the crust of the earth; general idea of minerals, rocks (classes of rocks), and fossils in the earth's crust; general

geological history of the earth's crust; some changes now in progress; volcanoes and earthquakes (brief theory and distribution). Relief forms: (a) of the earth, mountains, table lands or plateaus, plains, steppes, and prairies; (b) of each grand division, North America, South America, Europe, Asia, Africa, Australia; (c) of the United States. Islands: (a) Continental, with theory of their origin, and principal chains; (b) oceanic, including volcanic islands and coral islands (with their classes); their distribution. (5) Water: The geological distribution of the ocean, with its great subdivisions; lakes; drainage (continental or steppe and oceanic), with examples. Ocean movements: Waves; tides, some theory of their cause or origin; currents, some theory of their origin, and their uses. (6) Atmosphere: The constituent parts, temperature, evaporation, winds, with some theory of their origin; of constant winds, trade winds, land and sea breezes. (7) Climate: Modifying causes; isothermal and snow lines; climate zones; vegetation (very brief), showing productions of different climates and how these productions affect human industries; animals (very brief), showing characteristics of different zones and continents; man (very brief), showing different races, their proportion, leading characteristics and distribution.

General history.—(1) History of nations of remote antiquity as reading lessons; attention to history of Babylon, Assyria, Egypt, Persia. Greece: History of Greece as reading lessons; attention to Argonautic expedition, Trojan war, wars with minor nations; laws of Lycurgus, Draco, Solon; the Persian invasions, Peloponnesian wars, sacred war, Macedonian Empire established, career of Alexander the Great, Achæan League, surrender of Corinth. (2) Rome: History of Rome as reading lessons; attention to the founding of Rome, the kingdom of Rome, government by consuls, by tribunes, and by decemvirs, plebeian and patrician contests, wars with surrounding nations; the Punic wars, the three triumvirates, wars with neighboring states, the civil wars between Marius and Sulla, Cæsar and Pompey, Octavius and Antony, the republic and the empire established, separation into Eastern and Western Empire, fall of Western Empire (476), and conquest of Eastern Empire (1453). The cause and the result of the conquest of the Eastern Roman Empire, with date. (3) The Dark Age, the feudal system, the crusades, and Central and Southern Europe during the Middle Ages, as reading lessons. (4) Germany: The Hanseatic League, the Reformation, the Thirty Years' War, the Seven Years' War, Napoleon's Wars, War with Austria (1866), and War with France (1870), with dates. Prussia: The reign of Frederick the Great, Napoleon's Wars, the partitions of Poland, and the Empire of Germany (1866), with dates. Austria: Rudolph I (Hapsburg), the partitions of Poland, a separate empire (1806), Napoleon's Wars, and Wars with Prussia and Italy, with dates. Russia: Peter the Great, Catherine II, the partitions of Poland, Napoleon's Wars, and the Crimean war, with dates. Other important events, history of contemporaneous nations, and history of America not connected with history of the United States, to be read.

Constitution of the United States.—(1) Attention to distribution of powers of government among the three departments; the nature of the duties of each department; the qualifications of members of each, the manner of their election or appointment, their terms of service, their privileges, duties, and powers, with text of the Constitution relating thereto. (2) The clauses relating to the powers of the General Government and those reserved to the States; the rights and privileges of citizens; the modes of admitting States, making foreign treaties, making appointments, of passing laws, and of amending the Constitution; the important amendments; to be carefully studied from the text of the Constitution.

MUSIC.

Under general direction of special music teacher.

(1) Music charts and manual; explanations of motive, phrase, and period; movement; accentuation; rhythmical reading of music.

(2) The diatonic minor scale, the natural minor scale, the formation of minor diatonic scales; their keynotes and their signatures.

(3) Further exercises in vocal training; registers or compass of the voices; reading music, naming degrees, and writing notes that indicate tones or degrees sounded; two-part and three-part exercises by note and by words, embracing subjects learned.

OBJECT LESSONS AND ORAL INSTRUCTION.

Anatomy, physiology, and hygiene.—Mainly by charts and lectures. (1) Bones: their form, composition, and uses; joints, how formed, and their uses; spinal column, its formation and peculiarities; teeth, their structure and preservation; broken bones, and how repaired. (2) Muscles and tendons: their formation and their uses; how attached; their contraction and expansion; voluntary and involuntary muscular motion; effects of exercise, of rest; general hygiene. (3) Digestive apparatus: the uses of the teeth; the salivary glands, their position and uses; mastication; the gullet; the stomach, its position, structure, and functions; gastric digestion; brief notice of duodenum, intestines, intestinal digestion, and lacteals; the importance of the liver; effects of chewing too little, of eating too often, too much, or irregularly; dyspepsia; general hygiene; common poisons and their antidotes. (4) Circulatory apparatus: the general relations of the heart, arteries, capillaries, and veins; passage of blood through the heart, arteries, lungs, veins; the pulse, and the rate of pulsation; close connection between the digestive and the circulatory apparatus; quantity of blood in the system; effect of exercise and fresh air on blood and on circulation, of tight garments, of scanty clothing, and of insufficient or improper food; wounds or cut arteries, and what to do; general hygiene. (5) Respiratory apparatus: the lungs, air cells, windpipe, nostrils; the ribs, the diaphragm, their muscles, and their functions; mechanical processes of respiration; the air we breathe, changes in the air from respiration, changes in the blood—arterial and venous blood; close relations between capillaries and air vessels; the capacity of the lungs; effects of tight lacing, of improper position, of impure air, of ventilation; drowning or suffocation, and what to do; the vocal organs, and their functions; general hygiene. (6) The skin: its structure and uses; perspiration and absorption; effect of perspiration; close sympathy of skin with digestive and respiratory organs; of bathing, of proper clothing; scalds and burns, and how to treat them; general hygiene. (7) The nervous system: general nature of the brain and nerves; special senses, touch, taste, smell, the eye (its structure and functions), the ear (its structure and functions); general hygiene.

Natural philosophy.—For pupils in senior department for boys. (1) Matter and its general and specific properties, with examples and illustrations. (2) Attraction: (a) cohesion: solids, liquids, gases; (b) gravitation: weight, pressure of water, pressure of atmosphere (balances, air pump, pump, barometer); (c) capillary: ascent of liquids into tubes (sponge, blotting paper, lamp wick, sap in vegetation). (3) Motion: inertia, force, resistance, action and reaction, centrifugal and centripetal force; with examples and illustrations. (4) Mechanical powers: weight, power, fulcrum; (a) the lever and its three kinds (crow bar, pump handle, balance, scissors, nut cracker, wheelbarrow, oars, door, tongs, ladder, muscles of the arm and leg; (b) the wheel and axle (windlass, capstan, watch fusee); (c) the pulley and movable pulleys; (d) the inclined plane, rolling barrels into a wagon, lowering boxes into a cellar; (e) the wedge; and (f) the screw; general principles and laws; applications in machinery. (5) Heat: (a) sources (sun, combustion, friction); (b) expansion and contraction of matter (solids, liquids, gases, thermometer); (c) change of form (solids into liquids, liquids into gases); (d) conduction and radiation (conductors, non-conductors, rays of sun, stoves, clothing); applications (ventilation, wind, evaporation, fog, dew, frost, clouds, rain, hail, snow, ice). (6) Light: (a) sources (heavenly bodies, combustion, friction); (b) refraction (glass or prism, water, air, the eye); (c) reflection (looking-glass, water); (d) necessary to growth and health of plants and animals. (7) General principles of vibrations and their applications in sound (the organs of hearing), and of electricity.

The program copied above is for the eighth year of the course, pupils being admitted to the lowest grade at the age of six. The program for this eighth year, together with that of the preceding year, is called the senior department. Examination for admission to the high schools is not based on the requirements of the eighth year grade, but on the requirements of the twelfth grade; that is, the last half of the sixth year. The classes in the senior department are taught exclusively by the principals.

The program for the first class in the grammar schools of Boston—that is, the highest class—forty years ago, at the time when the first written examination was applied, was as follows:

GRAMMAR SCHOOL, HIGHEST CLASS.

Emerson's National Spelling Book; Goold Brown's First Lines of English Grammar; Olmstead's Rudiments of Natural Philosophy and Astronomy, or Parker's Compendium of Natural and Experimental Philosophy, stereotyped edition; Woodbridge's Geography and Atlas; Pierpont's American First Class Book; Worcester's Elements of General History; exercises in composition and declamation; writing; penmaking; the North American Arithmetic, Part Third; Robinson's Book-Keeping.

The following studies and books may be introduced, at the discretion of the master: Smellie's Philosophy of Natural History (Ware's edition); Goold Brown's Institutes of English Grammar; Whately's Rhetoric; Parker's Exercises in English Composition. Pupils who shall have nearly completed the course of exercises in arithmetic may be instructed in algebra and geometry. Text books, Bailey's First Lessons in Algebra and Tillinghast's Plane Geometry.

The critics of the schools at that period found fault with the schools for not doing enough. It was charged that many teachers were inefficient and that the general results of the instruction imparted were unsatisfactory. Hence a written examination was instituted to ascertain the comparative standing of the first classes in the respective grammar schools in the different branches taught. Up to this time pen and pencil were very little used by the pupils in the processes of instruction employed. To ascertain the result in spelling and punctuation the errors in all the exercises were marked.

For the questions used in this examination, see Appendix C. These questions indicate the committee's idea of what it was reasonable to expect.

In respect to the order of the studies and topics and the grouping of them in the respective grades or classes, there are found diversities difficult to account for. For example, in the Philadelphia program copied above, the formation and analysis of script letters is a requirement of the highest class of the grammar grade, while in St. Louis, the pupils in the very first quarter of their schooling—that is, in the lowest primary grade—are required to do substantially the same thing, namely, to write the separate elements, or principles, of which letters are composed, and to form a considerable number of the letters of the alphabet by the synthesis of these elements. There seems to be no generally accepted rule as to the proper place of the spelling book in

the course. In some programs it finds a place in the early stages; in others it appears only in the uppermost classes. A very great proportion of programs would be improved, as it seems to me, by simplification, that is, by reducing the number of matters requiring attention through the same day, the same week, or the same month. Why should scholars be kept on arithmetic every day for six or eight years? And why not let up occasionally on other studies, such as geography, or reading, or writing, or spelling? What are called language exercises have more recently become almost an intolerable incubus on the program. Much valuable time is wasted on premature requirements in this department. It would be unjust not to acknowledge that much excellent work has been done in program making. A good program for one city would be, in its substance, if not in all details, a good program for every other city. Why, then, should the school authorities of each city think it necessary to construct their own programs? Why not openly adopt such as have been framed by the most capable and the most eminent experts? It is impossible for a young and inexperienced superintendent to contrive a good program unaided, for to forge out a good program is, perhaps, the most difficult of pedagogical tasks.

SUPPLEMENTARY READING.

In the early history of our school system there were no such books as school readers, the New Testament, the Bible, and the Psalter being the only books for reading used in school. The publication of a good selection in prose and poetry from various authors, for the exercise of pupils in the art of reading, was an important step of progress. The pioneers in this improvement were Noah Webster, Lindley Murray, and Caleb Bingham, the last a Boston schoolmaster, who, taking advantage of the dearth of school books and of reading books in particular, at the revival of common schools which followed the war of Independence, divided the country among them.

Webster's Third Part and Bingham's American Preceptor held their ground as the principal readers for a quarter of a century. The Pierpont series, the next great step of progress in this direction, were the leading readers for another quarter of a century. And the highest book in this series, the American First Class Book, as originally published in 1823, was a production of surpassing merit. It instituted a standard both in respect to choice and arrangement of material which subsequent compilers have found it no easy task to excel.

But the good readers of all grades, from the child's primer to the first class reader and speaker, which have been compiled and published during the last fifty years for use in our schools, are very numerous. Recent compilers have a great advantage over their predecessors of the time of Pierpont, inasmuch as they have a vastly richer storehouse from which to draw. But it is more than doubtful whether this advantage has been fully utilized. In these latter days the tendency has been to

grade down the selections to too low a standard, especially in the lower grades of readers, and to give too much space to pieces which possess hardly any other merit than that of being easily comprehended. The true function of a reader is not merely to serve as an instrument for teaching the child to call words at sight or as a manual of exercises in pauses, inflection, and emphasis, but it should also be a golden treasury of wisdom, of information, of "thoughts that breathe and words that burn," of the noblest sentiments "married to immortal verse."

The school reader, according to its grade, should comprise the pieces best calculated to develop the sentiment of the true, the good, and the beautiful. It should be the child's classic. Every piece within its covers should be a gem of poetry or of artistic prose worth committing to memory. The child could not become too familiar with such a reader. Proper instruction in the ideal reader—drilling upon it till its substance of thought becomes worked into the very fibre of the child's mind and the physiognomy of every word becomes familiar to his eye—would far surpass in value that in any other branch of instruction included in the school curriculum.

Recently the plan of supplementing the readers by the introduction of other reading matter has come into vogue quite extensively. With a view to meet the demand for this supplementary reading, a good many books have been compiled and published. Besides books designed for this purpose, juvenile periodicals and newspapers, and sometimes a second series of readers, have been introduced; and, finally, biographies, histories, and works of fiction have been more or less used for supplementary reading.

Some of the advocates of this plan have put forth most extravagant claims in its favor. Compilers and publishers naturally did what they could to sound its praises, as it could not fail to put money into their pockets.

In a short time this supplementary reading business was in some quarters greatly overdone. Fortunately, a reaction has set in, and much of this supplementary rubbish is finding its way to the junkshop, while the regular readers are again coming to the front in the school room.

If the readers were what they should be in respect to quantity and quality of matter and if such readers were properly handled by the teachers, the need of supplementary reading would be reduced to such a minimum as to be scarcely perceptible.¹ Almost the only thing needed in this line would be an occasional number of a good newspaper; and the use of the newspaper in the school should be restricted to the more judicious and capable teachers in the upper grades. I do not fear to lay it down as a rule that where instruction in reading is unsatisfactory

¹ No additional reading matter has been introduced in the recitations, it being the theory in our schools that more real progress is made by thoroughly mastering a few lessons than by superficially reading many.—(St. Louis Report for 1880-'81, by Mr. Edw. H. Long, superintendent.)

the true remedy does not consist in furnishing supplementary reading, but in changing the reader or the teacher or both.

Improvement in reading is not to be sought, then, through the use of miscellaneous extraneous reading matter, but through the making and the skilful use of good reading books—books to be read all through, from the first page to the last, and read until every piece becomes familiar, not merely tasted or swallowed, but chewed and digested. Such readers, so used, become the veritable humanities of the elementary school, as well as the best instrumentalities for teaching reading in the proper acceptance of the word.

INDUSTRIAL EDUCATION.

It may be well, in the first place, to define what is meant here by the term industrial education, which is used rather loosely in the current discussions on the subject. Some writers use it in the same sense as technical education; better usage makes a distinction, however. J. Scott Russell, in his masterly book *Systematic Technical Education for the English People*, gives to technical education a broader meaning than that which belongs to industrial education, making it include all that education which teaches the knowledge required to fit men for some special mode of gaining their livelihood, and thus embracing the instruction of the highest professional schools, as well as that given in schools designed to form the handicraftsmen of the humblest degree. Non-technical or general education, on the other hand, is that which has for its object to train and send into the world able men of matured intelligence and ripened powers, good for all the vocations of life and prepared to enter upon its duties with sound bodies, developed ability, and formed character; but it is not designed to communicate that special knowledge or to develop that special skill which fits a man for the particular calling or profession which he will have to choose as his life work. This general education is the necessary basis of efficient technical education. Large education, broad development, a generous general training, are the best possible foundations of useful after life, but they are only the foundations of the knowledge and skill requisite for professions and trades. This knowledge and skill it is the function of technical education to impart; it gives that special training which renders the educated man both self supporting and directly useful to society. I willingly adopt the signification given to technical education by so eminent an authority, although my choice would be to call all that education which is not general professional, after the nomenclature of the French pedagogy.

Technical education in this comprehensive sense is composed of two tolerably well defined divisions, the one being that which is concerned with the social professions and those relating to the fine arts, while all other occupations and pursuits requiring the application of science, art, and manual skill are included in the other division. This province of

technical education is what we mean by industrial education, which has for its scope to impart the knowledge and skill requisite for success in the three great departments of practical life, namely, agriculture, manufactures, and commerce, or, in other words, in producing the raw material from the ocean, the mines, the forest, and the field, in converting these materials into useful forms, and in their transportation and exchange.

In its widest sense, industrial education comprises not only all that a man does for himself, but also what is done for him by others to bring him nearer to perfection as a worker in any branch of industry.

In a more limited sense, industrial education is that which is designed to impart the knowledge and skill requisite as a preparation for successful work in that department of practical activity which is concerned in changing the raw material into useful forms, or the manufacturing industry.

In former times, knowledge and skill in industrial pursuits were almost exclusively acquired by means of apprenticeship. This held true not only of the mechanical trades, but of the liberal professions as well.

That state of things has passed away. An auxiliary instrumentality has been created by the demands to advance civilization; that instrumentality is the technical school, in its elementary, secondary, and superior grades and in its ever increasing diversity of aim and purpose. Industries made but comparatively slow progress while they were carried on by persons whose instruction was limited to apprenticeship. Gradually, and in more recent times, the idea has made its way that the progress of an industry depends especially upon the degree of instruction of those who exercise it. This led to the establishment of industrial schools. The competition of industries is rapidly multiplying these schools, and, from present indications, these schools are destined to a development far beyond that as yet attained in the most advanced community. Industrial education is of two kinds: first, that which consists in imparting a theoretical knowledge and the applications of science and the principles and rules of the useful arts, such as may be given in the class room and laboratory by the teacher and professor; second, that which consists in imparting the manual skill and the applications of science and the rules of the arts necessary to form the handicraftsman of whatever grade. This is the education of the shop. The school for imparting this branch of industrial education is therefore primarily and essentially a workshop, supplemented to some extent with the theoretical training of the school room and the manipulations of the laboratory. The considerations relating to industrial education here submitted must be limited to that portion of it which is imparted in schools, and, moreover, such schools as properly come within the scope of city school systems.

No school question is at present more agitated among us than that of

making manual training a branch of instruction in the common school. Some extremists maintain the trades should be taught in the schools in connection with the common branches now required, so that when the scholar graduates he will be prepared to earn his living as an artisan on leaving school. Others more moderate in their views would not undertake to teach trades in school, aiming only to exercise the pupils in the use of the principal tools, in working wood and iron. So far the different theories on the subject have been put into practical application only to a very limited extent. The two important practical questions in this connection which claim our attention are, first, what has been already accomplished in the direction of industrial education in our city school systems? second, what does experience indicate as desirable improvements to be undertaken in the department of industrial education?

Some account of the progress in industrial drawing is given under the head of evening schools. Sewing is considered so important a branch of instruction for girls that it is considered under its proper head.

HANDICRAFT AS A BRANCH OF PUBLIC INSTRUCTION.

There are two modes of giving instruction in handicraft in schools: First, by annexing the workshop to the school for general education, whether elementary or higher. This mode is sometimes called the putting of the workshop into the school. Second, by establishing technical schools for apprentices, consisting primarily of the requisite shops, with appliances for giving the theoretical instruction applicable to the trade taught. This mode has been denominated the putting of the school into the workshop.

Considering the widespread interest in the question of teaching handicraft as a branch of public instruction, I present here, somewhat in detail, an account of the experiments thus far made in this direction, of which I have been able to obtain information.

Gloucester, Mass.—Population, census of 1880, 19,329; chief industry, ocean fishing. The money for the experiment was placed at the disposal of the school committee of Gloucester, in 1878, by Miss Marian Hovey, one of the trustees of the estate of George O. Hovey, a former summer resident, deceased. In pursuance of the object of this gift, provision was made for the instruction, on Saturdays, of four classes of boys, of twelve members each, from the two upper classes of the grammar schools in the handling of some of the principal tools used in carpentry. A practical carpenter was employed as teacher.

For the accommodation of these classes a room of moderate size was fitted up with twelve benches, and, in addition to the vise and bench hub, each bench was furnished with the following tools: A rule, try square, hammer, jack plane, jointer, smoothing plane, bit stock, bit, mortise gauge, mallet, $\frac{1}{2}$ -inch mortising chisel, $1\frac{1}{4}$ -inch paring chisel,

chalk reel, rip saw, panel saw, screw driver, brad awl, oil can, oil stone, and bench hook.

The course was arranged for forty lessons, the length of each lesson being equivalent to the half of a half-day session. The pupils were assigned benches and those using the same tools in succession were held responsible throughout the whole course for keeping the tools in good order, for using them carefully, and for returning them to their proper places at the close of each lesson.

The attendance was entirely optional, but the pupils were required to be as attentive, industrious, and orderly as during any portion of their school work. As the novelty wore off it was found that the attendance gradually diminished. The committee, therefore, in 1880, changed the arrangements so as to relieve the pupils wishing to take the instruction in carpentry from sacrificing therefor a part of their holiday, by permitting the pupils in carpentry to take lessons during school hours on the afternoons of Monday, Tuesday, Thursday, and Friday of each week, two classes being instructed each afternoon. By this change regularity and punctuality in attendance were secured, and from a membership in the carpentry class of thirty pupils there was an immediate advance to the number of ninety-six (being one-half of the number of pupils in the two upper classes in the two principal grammar schools) in eight classes, each receiving instruction one hour, the time of one-half of the afternoon session. Six girls accepted an invitation to take the first course with the boys. Under the subsequent arrangement as to time, two classes and a part of a third were composed of girls.¹ In regard to their work the superintendent remarks: "The work of the girls is equally as good as that of the boys and they seem to enjoy it heartily." The name and manipulation of each tool were taught successively in connection with the operations performed upon the stock, consisting solely of pieces of pine board, both milled and rough.

These operations were reviewed and synthesized near the end of the course in eight lessons, in constructing from rough boards a box 2 feet long, 1 foot wide, and 8 inches high, the cover being hung with butts and fastened by a lock; the last two lessons were devoted to preparing and sharpening tools. The amount of material used by each pupil was about 25 square feet of boards varying from seven-eighths to an inch and a quarter in thickness. The superintendent estimates the cost of this kind of instruction as follows:

A room similar to the one at Gloucester can be fitted up for a carpentry class at an expense not exceeding \$500. In such a shop, thoroughly and completely equipped for the purpose, one teacher can instruct four classes each day—twenty classes each (school) week—and do his work efficiently. Sixteen members may be permitted to attend each class without detriment to the progress of individual pupils. Allowing forty weeks for the academic year and making the salary of the teacher \$20 per week, the annual cost of instruction would be \$800. The expense of stock would not exceed 50 cents per annum for each pupil. Upon this basis the per capita expense of instructing three hundred and twenty pupils would be about \$3 a year.

¹In this city girls were not taught sewing.

The amount actually paid from Mr. Hovey's estate to defray the expenses of this manual training school during its continuance of about eighteen months was \$742.51. It was discontinued July 1, 1880, because the city government refused to make an appropriation therefor and Miss Hovey was unwilling to make any further contribution for the purpose.

Superintendent Marvel, in referring to the experiment in his report, remarks as to its results as follows :

This attempt to combine intellectual and manual training will tend to dignify manual labor in the opinion of many young people just at that critical period when so many are now wasting opportunities for practical education in a vain endeavor to accomplish purely intellectual work for which they are totally unfitted. Recognition in the public schools that mechanical occupations are equally as important as the professions or as mercantile pursuits, and that the scheme of public instruction is broad enough to afford an education adapted to the needs of all classes of citizens, cannot fail to leave a marked effect upon the succeeding generation. Boys and girls will deem it no less honorable to be found in the fields and workshops than in stores and offices, so long as they are engaged in legitimate and honorable occupations.

Boston, Mass.—Here the experiment was made in consequence of an offer by the Boston Industrial School Association. It was limited to one school, the Dwight grammar school for boys, in charge of Mr. James A. Page as master, containing about 625 pupils, 135 being fourteen years of age and upwards. The proportion of pupils coming from well-to-do families is much above the average of the grammar schools of the city. One of the school rooms of the building, 27 by 27 feet, was used for the shop, which was furnished with three long benches, each accommodating six pupils and eighteen sets of the principal tools used in carpentry. A practical carpenter was employed as instructor. Two classes of eighteen members each were selected for the shop instruction. One of these classes was drawn from the upper or graduating class, nearly all the members of which offered themselves as candidates; and in order to give the experiment a more practical application to the average material of grammar schools, the other class was taken from the second, third, and fourth classes, there being six classes or grades in the school. Many of these latter had already handled tools to a certain extent, either at home or in their fathers' workshops. Among the boys selected there were those both of American parentage and foreign; some were among the oldest and largest in their respective classes and some among the youngest and smallest. The conditions of admission to the shop work were that the candidates must be tall enough to work at the benches, strong enough to handle the tools, and studious enough to maintain their rank in their regular school studies. The course of instruction was arranged in eighteen progressive lessons, which were given on Mondays and Thursdays from 2 to 4 o'clock. The lessons commenced in January, 1882, and ended in the following May. Each class received practically one lesson of two hours each week, eighteen in all. The program was fully written out on the blackboard. School discipline was maintained

during shop work and each boy was marked for his work at the end of the lesson, the marks being preserved. The lessons of the classes from which the shop boys were drawn were so arranged that drawing and writing should come on the afternoons of their absence, as these lessons were comparatively easy to make up. The total cost of the lessons was \$711.95, room rent and heating not being reckoned. The cost of tuition alone was \$175, the cost of material was about \$20, and the cost of sundries the same, making the cost per pupil for these three items about \$6. In reporting the experiments to the school board the master says:

The order was good and the pupils interested. It was delightful to see the eager desire manifested everywhere in the room to do the day's work well. There was no absence, no tardiness. * * * I consider that the results go far to prove that manual training is so great a relief to the iteration of school work that it is a positive benefit rather than a detriment to the course in the other studies.

In another connection Mr. Page said :

I have no doubt that there was a great benefit to these boys in what they learned about tools and their use, and that it will go with them through life; in fact some of them have told me that they now have a set of tools and do all the little odd jobs about the house. * * * The chief good we look for, however, is in the effect on the general training. "The hand for the sake of the brain."

Although these two experiments were interesting and well managed, it would, perhaps, be difficult to say what they proved that was not already admitted or what material question they settled. That boys of the proper age should be pleased with hand work of such a nature and performed under such circumstances, that they should succeed well in such simple manipulations and derive therefrom a certain degree of useful information and training, were results which any one tolerably well versed in boy nature would naturally expect. The question at issue is not whether a certain percentage of boys in grammar schools like and can successfully perform certain operations upon wood with carpenters' tools. This may be easily granted. The real question is whether it is best to put the shop into the grammar school for the instruction of boys in handicraft, either as a means of promoting intellectual education or as a substitute in part or in full for apprenticeship to a trade.

The second experiment in Boston.—The superintendent of the public schools of Boston, Prof. Edwin P. Seaver, in discussing this subject in his third annual report, 1883, says:

Even if the purpose for which these schools [grammar schools] exist—elementary general education—admitted the introduction of shop work (which in my judgment it does not), yet the great expense of providing many separate schools with shops, tools, and machinery would make the thing altogether impracticable. Moreover, it should be borne in mind that shop work is not suited to the strength and stature of boys under fourteen years of age; and four-fifths of the boys now in the grammar schools are under that age.

Discarding, therefore, the idea of introducing mechanical education

into the grammar schools, he advises as a substitute the establishment of a special manual training school, as follows:

The best provision, therefore, would be to establish at some central point in the city one manual training school, to equip this school thoroughly for its work, and to admit to it, under suitable restrictions, boys from all parts of the city. A single school, large enough to accommodate two or three hundred pupils, would be the most economical provision that could be made. By changing the classes in accordance with a properly arranged time table, the shops and tools would be in use all the time, and the instructors, both in shop work and in ordinary school work, would be constantly occupied. In this school the boys should continue their ordinary school work about two hours a day, attend to drawing one hour, and work in the shops two hours more. If the course were made three years long, the intellectual work would cover the upper part of the grammar school course (or the most essential studies in it), together with some parts of the high school course. The manual training could be brought up to the point of enabling pupils, on leaving school, to enter many manual employments with advantage to themselves, and therefore to the community. Not that the school would or could teach any single trade as would be done in an apprentice school, but its pupils would be so well grounded in the general principles of many trades that the specialties of each trade would be very quickly learned. The experience of the St. Louis school, as well as that of other similar institutions, leaves little doubt on this point.

The special committee of the school board appointed to report on the subject recommended as an experiment the organization of an elementary manual training school, at a central point, for the instruction in carpentry of boys in the grammar schools over fourteen years of age. The members of this school are to receive one lesson of two hours each week, and for this purpose are to be excused from attendance at their respective schools one-half day each week. The city council has appropriated \$2,500 for the equipment and maintenance of this manual training school, which is to be opened in the basement of the Latin School building, with a course of instruction similar to that of the Dwight School experiment. This scheme is evidently not in accordance with the recommendation of the superintendent, who says expressly that the purpose of the elementary school does not, in his judgment, admit the introduction of shop work, and he therefore recommends the establishment of a manual training school, with a course of study of its own, in accordance with the generally accepted theory that technical education should come after and be based on general education.

The school board, however, did not act in accordance with these judicious views.

The plan recommended by the committee, both in principle and effect, is the same thing as the placing of the shop in the elementary school, although this committee did not recommend this plan as their first choice, but as a makeshift, hoping for better things in the future. As to their preference they say:

Past experience has shown that it is useless to ask for the appropriation of a sum of money sufficient for the establishment of a separate and fully equipped industrial school, where instruction and practice in the use of tools could be combined with mathematics, drawing, and the English branches of a high school course.

Hence the above plan, involving a comparatively small expense, was recommended.

Such is the poor, pinched, and scanty outcome of the agitation and discussion of the subject of establishing industrial schools for fifteen years, which was inaugurated by the report of the superintendent in 1869, in which he says:

Many thoughtful and philanthropic persons in the community are beginning to feel that we are concentrating our efforts too exclusively upon intellectual instruction. It is thought that the tendency of the schools is to give the pupils a distaste for manual occupations; that they are too much stimulated to persevere in their school studies by fallacious hopes of obtaining a livelihood in occupations which do not require manual labor. To counteract this tendency and at the same time to supply the existing demand for skilled labor, the project has been suggested of establishing one or more special schools in which boys and girls might be taught various trades in connection with the ordinary branches of elementary education. How far such schools would be practicable I am not prepared to express an opinion; but I am in favor of adapting all our educational systems and institutions to the actual wants of the community, and it strikes me that this question of industrial schools is at least worthy of careful investigation.

In the discussion which followed the above suggestions, it was ascertained that the city had no legal authority for establishing industrial schools. Authority, however, was granted in the following public act, which was secured for the purpose in 1872:

A town may establish and maintain one or more industrial schools, which shall be under the superintendence of the school committee, who shall employ the teachers, prescribe the arts, trades, and occupations to be taught therein, and have the general control and management thereof; but they shall not expend for any such school an amount exceeding the appropriations specifically made therefor, and shall not compel any scholar to study any trade, art, or occupation without the consent of his parent or guardian; and attendance upon such school shall not take the place of the attendance upon public schools required by law.

It will be observed in the last clause of this act the legislature carefully guarded from encroachment upon the general education prescribed for the public elementary schools.

Peru, Ill.—The next place after Boston in the order of time to repeat the Gloucester experiment was this western town, with a population of 4,632, but with somewhat better shop accommodations. This experiment is still in progress. The shop is a room 30 by 50 feet, in the basement of a new brick school, lighted by eight windows on three sides. This room is fitted up with ten double benches for the accommodation of twenty pupils. The tools furnished and the program and method of instruction are essentially the same as those of Gloucester and Boston, already described. Two classes of twenty pupils each are taught for forty minutes each day and half a day on Saturdays. These classes are taken one from the second grammar school and the other from the first grammar and high schools, but from the last school only the younger boys are taken. The ages of the boys in these classes range from eleven to fifteen years. The daily performance of each boy is marked as it

would be in any other branch of instruction. Entrance into these classes is wholly voluntary on the part of the pupils. While the boys are in the workshop the girls of the same class are engaged in sewing.

Moline, Ill.—In this town, containing a population of 7,800, no provision for special instruction in shop work was made, the principal feature of the plan of industrial education here on trial consisting of an exhibit of pupils' drawings and mechanical productions. The exhibition took place in the rink, March 29, 1884.

Suspended from wires or spread upon tables were upward of three hundred articles of fancy work of all descriptions, combining the ornamental and the useful in varying proportions: fifty or more examples of plain sewing; on a table by itself, 60 loaves of bread, with cakes and pies. This was the work of the girls, principally. The boys contributed 31 toys, 30 models, 27 examples of wood carving; and 60 articles of every day usefulness. These together make a total of over 600 articles for home use and ornament, and mainly the work of youngsters from six to fourteen, the number above that age being quite small. In addition to the large showing of industrial work, there were exhibited on the wall in groups a large number of pencil drawings, each group being arranged about the large pattern set by the teacher.

Nearly fifty prizes were awarded, ranging from one dollar to five, and twenty-three honorable mentions.

The scheme¹ for the coming exhibition is given as follows:

Class A: Models of machines, implements, or other mechanical contrivances.

Class B: Articles, other than models, the value of which shall depend upon their utility.

Class C: Articles the chief value of which shall depend upon the artistic skill displayed in their production.

Class D: Drawing (open to pupils of all ages): (1) Freehand copy, without measurements, of an outline drawing placed before the pupil; (2) original design in black and white for wall paper, carpet, oil cloth, centre piece, or border, &c., the conventionalized unit or units to be furnished pupils.

Class E: Special prizes (open to pupils of all ages): (1) Wood carving; (2) loaf of bread; (3) plain hand sewing.

Class F: Individual art prizes: (1) For best painting or crayon drawing; (2) for best design for frieze, in colors; (3) for best design for centrepiece, in colors.

New Haven, Conn.—An industrial exhibition similar to that at Moline, above described, was held in New Haven, at the Skinner School, April 21, 1884, consisting of articles of wood and iron by the boys, for use and ornament, and plain and ornamental needle work in great variety by the girls, and also articles of cookery: bread, cake, pies, cookies, and puddings. Among the articles produced by the boys were boxes, a book-case, a wheelbarrow, towel racks, scouring boards, specimens of mortising, single and dovetail joints, &c., and one boy, whose inclination was for iron work, displayed a small engine of his own work, complete. The articles of needlework exhibited by the girls comprised dresses, skirts, aprons, quilts, towels, tidies, worsted afghans, mats, rugs, and mantel

¹ For the scheme in detail, see Appendix D.

lambrequin. The principal contributors in aid of this industrial experiment were Mr. E. M. Reed, General Greely, Mr. H. P. Hubbard, Professor Brewer, Mr. Richard S. Fellows, Judge Robinson, and Mr. Sutton.

In addition to this exhibition an experiment in manual training of the Gloucester type was made, and is thus referred to by Superintendent S. T. Dutton in his report for 1884:

In each of the Dwight and Skinner Schools a large basement room was fitted up with benches and supplied with tools sufficient for a dozen boys to work at once. Each boy attended twice per week for an hour. At the Dwight School sixty different boys, selected for superior scholarship, received training, and at Skinner about thirty were thus fortunate. Messrs. Judd and Loper, the respective janitors of these schools, gave the needed instruction and did much to make the enterprise a success by their interest and zeal. A thorough course in plain carpentry was given and many useful and ornamental articles were manufactured.

The superintendent, discarding all idea of teaching trades in school, states as follows regarding the disciplinary result of the experiment:

The principals of both schools are emphatic in saying that the effect was salutary both upon the mental life and manly bearing of the pupils. Several parents testify to the same result and are, without exception, anxious to have such training continued. It is said that those receiving the training, being the older and more influential boys of the school, exhibited a positive interest in their daily work and a propriety of conduct which was helpful in elevating the standard of tone in the whole school.

In view of this result, taken in connection with the practical utility of the facility acquired in the use of tools and considering that this form of education is in the stage of experiment, he suggested the propriety of providing for a still broader application of the plan and recommended therefor the following scheme, which was adopted:

To let a group of twelve or fifteen boys from each of the grammar schools of the city spend one afternoon a week in the manual training school. The room and appointments at the Dwight and Skinner schools are ample for the purpose, and the plan would simply require that the boys from other schools should travel the longer distance once each week. The groups from the several schools would of course be assigned to the school nearest their own. It could not be asked or expected that the instruction could be given for so small compensation as last year. The janitors should receive from \$200 to \$300 each in order to enable them to employ extra assistance, which they would be obliged to do. An allowance of \$100 should be made for each school for lumber and tools, so that at the outside \$800 would cover all expense and fairly compensate the instructors. The legal difficulty, which has hitherto been a convenient bar to such a project, has fortunately been removed. The statute which designated the studies to be taught in the common schools of this State was, at the last session of the legislature, so amended, at the instance of Hon. J. D. Plunkett, as to include "manual arts."

The superintendent writes, under date of November 8, 1884, that there are six classes of boys working two hours per week with carpenters' tools on the plan above outlined.

So far as I have been able to ascertain, these are the only experiments in this direction that have been made in connection with our city elementary public schools.

It is evident that these four experiments, leaving out Moline, are es-

sentially the same in object, plan, and results. The experiment is in substance an addition to the usual curriculum of elementary instruction of shop work of a clean and pleasant variety but requiring considerable muscular force, as a means, not of apprenticeship to a trade, but as a disciplinary instrumentality, to promote the harmonious training and development of the mental, moral, and physical faculties; that is, a gymnastic, an element of general education.

The instruction is given in school time, but attendance on the classes is voluntary. The work is carpentry applied to the manipulations of pine boards, the instruction being given by special teachers. Only the older pupils are admitted to the class. The pupils are uniformly interested in the work, and they acquire considerable facility in using the more common carpenters' tools.

The Tournefort Street School, Paris.—The idea of connecting the workshop with the elementary public school is not a new one; its pros and cons were ably discussed in France a century ago and some attempts were made to put it in practice, though with no permanent result. Recently the experiment has been renewed in Europe under more favorable auspices. The most conspicuous example of the shop in the elementary school in Europe, and the one which for several years past has been most frequently referred to as evidence of the desirableness and practicability of this plan of industrial education, is that of the Tournefort street school, Paris. As the notices of this school which have appeared in our publications have been, so far as I have seen, loose, inaccurate, and incomplete, it seems desirable to state its plan here somewhat fully.

This is an elementary public school for boys, comprising the grades which we denominate primary and grammar, the pupils being expected to complete their course at about thirteen years of age. In 1878 I visited this school in company with the excellent M. Salicis, a professor in the Polytechnic School, who was the chief promoter of the scheme and who has published a vivacious and interesting little book¹ giving a full account of its plan and object, with an expression of his views as to the needs of such instruction in France.

The hand work element or apprenticeship was introduced into it in 1873. For the purpose of this new instruction the school was provided with four additional rooms, one for modelling and carving, one for instruction in what is called technology, one for wood work (furnished with benches and a lathe), and one for iron work (furnished with vises and a forge). The technology room is in reality a class room combined with a museum of raw materials, typical specimens of work representing the general processes of the trades already alluded to, and a variety of tools. Here oral lessons on these matters are given to the mechanical classes by the intuitive method. Boys are not admitted to the mechanical de-

¹L'enseignement primaire et l'apprentissage. Par G. Salicis. Paris, 1878.

partment under eleven years of age. The course is three years. In the first year all the members of the class pursue the same course of manual exercises. Afterwards some optional specialization is allowed.

The circumstances of this school have been so peculiarly favorable that its plans, management, and results may be fairly assumed to be the best anywhere attainable at the present time. In order, therefore, to render the treatment of this topic sufficiently complete for the object in view, the course of instruction, translated from M. Salicis' book, is here quoted :

(1) Continuation of the actual school instruction modified; maintenance of the examinations which, by the *satisfecit*, give the right to the certificate of elementary studies [or, as we say, diploma of graduation from the elementary school]. (2) Study and handling of raw material. (3) Drawing from relief, modelling, moulding; carving of soft stone, of marble, and of wood; drawing with pencil and brush (*graphique et lavis*). (4) Practice with general processes and tools; work at the bench, at the forge, at the lathe, and at the vise; first specialization, when the apprenticeship is established in view of a particular industry. (5) General technological instruction and specialization, at need, of a part of this instruction; book-keeping; industrial and commercial geography; first elements of economy. (6) Drawing with rule and compass of an object made or a simple machine; reducing of a sketch to a given scale; sketch or freehand drawing in just proportion; reciprocally, execution after a drawing made to a given scale, or after a sketch with proportions indicated. (7) Invention; drawing, execution of simple projects. (8) Morality: Duties of men—The child, the man who lives by his labor, the man of means, the man in relation to his fellow beings, the head of the family, the citizen, the country. (9) Habits: Order in person, order in respect to tools, order in work, order in the shop, order in statements, order in the mind, and, consequently, in the conduct.

The school sessions are held every day in the week, except Sunday, beginning at 7 o'clock in the morning and ending at 6 o'clock in the afternoon, with a short recess both forenoon and afternoon, at 11 and 3, a slight luncheon at 4, and an intermission of one hour from 12 to 1 (for dinner and recreation), excepting on Thursdays, when the regular session is only from 2 to 4, the two following hours being either free or devoted to a promenade for instruction. It thus appears that the regular school hours amount to fifty-seven per week. This, it will be seen, is more than double the school time in general in our city schools.

The general instruction of the apprentice classes is the same as that of the upper grades of the other schools, with the addition of the elements of physics, chemistry, and natural history, and of the history of industry. Twenty-four hours a week are given to the industrial instruction. This school did not fall below the others in respect to the number of its graduates. Of the 94 boys who completed the course during the first five years, 5 pursued their studies in high schools, where they held a good rank; 16 engaged in the industry of wood, 20 in the industry of metals, 22 in different industries; 14 in commerce, as clerks or accountants; the remaining 17 not reported.

Of the success of the graduates, the able director of the school, M. Laubier, says:

Our apprentices, being immediately useful in the shop, are less employed to run of errands, better paid, more permanent. I could cite lads of fifteen years who are receiving two and a half francs and two and three-fourths francs per day and who have not more than six months to serve before receiving pay as workmen.

The late director of the public schools of Paris, M. Gréard, an authority of the first order, thus sums up his judgment of this remarkable experiment:

In our opinion it would not be without peril to the very foundation of national education to restrict the measure of time allotted elementary studies properly so called. If, at the school in Tournefort street, one has been able to give four hours a day to hand work without inflicting any sensible damage on the general education, the result is due to the special qualifications of a devoted master, who has put his whole heart into the experiment with an élite of pupils, a condition doubly exceptional, upon which it would be rash always to count. But out of the hours of the regular classes, children, boys especially (who are not occupied like girls in the details of domestic life), have leisure which is often an embarrassment to their families and which more often they do not employ for good. It is this leisure which it would suffice to permit to manual labor.¹

This school appeared to me to be admirably organized and managed in all respects, but my visit left on my mind one impression which has had no little influence in preventing me from recommending the adoption of the plan, namely, the evident inadequacy of most of the boys in point of physical force to the prescribed work. What can the average boy of eleven or twelve, or even thirteen, do with the jack plane, the hand lathe, the forging hammer, and the file? It would be wiser, in our judgment, to postpone these exercises as a rule until boys are fourteen years of age, or thereabouts.

M. Salicis has made no pretence of justifying the hand work of three years in this school as a necessary means of intellectual development in elementary education. The merit he claims for it consists in its value as a preliminary apprenticeship in preparation for the apprenticeship of the shop.

The fact that this school, which is so well known, still remains, after eleven years of existence, the only one of its kind, not only in France but elsewhere, affords strong proof that the plan does not find favor with educational authorities. The best pedagogical opinion is everywhere opposed to the annexing of the shop to the elementary school as a means of training boys as apprentices to a trade or trades. If it is admitted, as we think it must be, that the training of boys in handicraft as a branch of industrial education should be postponed till after the first stage of general education, which is called primary or elementary education, the question arises, What is the most practicable thing

¹Translated from *Mémoire sur l'enseignement primaire à Paris et dans le département de la Seine de 1867 à 1877.*

to be done in the way of mechanical training for boys who desire it, after completing the common school course?

The manual training school in connection with the Washington University, St. Louis.—It is thought by some that the manual training school established in connection with the Washington University, St. Louis, affords a solution of the problem of handicraft as a branch of public instruction. The plan of the St. Louis school is original. It is essentially a non-classical high school, with fully equipped shops annexed for work in wood and iron. Candidates for admission must be fourteen years old and pass an examination about equivalent to the requirements of the second class (next to the highest) in a grammar school. The course of instruction covers three years. The daily session begins at 9 A. M. and closes at 3.20 P. M., ample allowance being made for luncheon. Each pupil has three recitations a day, one hour of drawing, and two hours of shop practice. Hand work is divided into four departments, namely: carpentry, wood turning, forging, and machine shop work. "All the shop work is disciplinary;" "special trades are not taught, nor are articles manufactured for sale." It is claimed that, without teaching any one trade, the essential mechanical principles of all are taught. The school was opened September, 1880, and in June, 1883, the first class of 29 young men was graduated. The enrolment in January, 1884, was 196. The school can accommodate a maximum of 240 pupils. As a rule, each shop room has uniform accommodations for a class of 20 pupils, and three such classes can be taught daily in each of these rooms. This school "proposes, by lengthening the usual school day a full hour and by abridging somewhat the number of daily recitations, to find time for drawing and tool work, and thus to secure a more liberal intellectual and physical development—a more symmetrical education. It is believed that, to all students, without regard to plans for the future, the value of the training which can be got in shop work, spending only eight or ten hours per week, is abundantly sufficient to justify the expense of materials, tools, and teachers."

"One great object of the school is to foster a higher appreciation of the value and dignity of intelligent labor and the worth and respectability of laboring men."

"In a manual training school tool work never descends into drudgery. The tasks are not long, nor are they unnecessarily repeated. Whatever may be the social standing or influence of the fathers, the sons go together to the same work and are tested physically, as well as intellectually, by the same standards."

"The grand result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more successful manufacturers, better lawyers, more skilful physicians, and more useful citizens."

From the above statements of the managers the scope and objects of the school are apparent. It is general in its objects, and not special.

It does not profess to be an apprentice school, nor an industrial school in any sense whatever ; it does not offer itself as the best school in which to form the handicraftsman, or the superintendent, or the engineer, or give preparation for college ; but it is offered as the best school for the boy above fourteen years of age whose career is yet undetermined by his own choice or the choice of his parents. Perhaps it will be more correct to say that it is offered as a substitute for the non-classical high school, which has its type in a German Realschule and in the Boston English high school.

This interesting and novel school seems to be meeting a want and doing a good service. It would not be strange that a single school of such a character should find sufficient patronage and favor for its liberal support in any one of our large centres of population, especially in one where there does not exist a well organized and equipped Realschule or non-classical high school. It may be easily admitted that such a school has its utility and its function and is to be welcomed into the ever increasing family of educational institutions, without admitting that it ought to take the place of the non-classical high school without annexed shops. We make progress in education mostly by means of specialization. To meet the new educational wants of an advancing civilization new types of institutions are created. This new type may therefore be regarded as a step of progress, not, however, as a substitute for what has existed, but as an additional instrumentality to meet the wants of individuals not previously so well provided for.

We say, therefore, and we say it emphatically, that it would be a mistake for a city to set up a school on the St. Louis pattern thinking thereby to establish an industrial school. If such a school is to be established, it should be established for what it is, and not for what it is not. It should be established as a particular kind of a high school for general education, and we should say further that it would be a mistake, both in respect to economy and utility, for a city to establish such a school in preference to a Realschule, its proper place being that of supplement to the latter.

Manual Training School in Chicago.—A duplicate of the St. Louis school has recently been established in Chicago under the auspices of the Commercial Club of that city, by the members of which the sum of \$100,000 was contributed for this purpose. The corner stone of the large and commodious building which has been erected for its accommodation, on the corner of Michigan avenue and Twelfth street, was laid September 24, 1883. The school was opened early in 1884. Although this school seems to be identical in character with that of the St. Louis school, its founders have, apparently with intention, stated its object in different language, as if to indicate their purpose to be the founding of an institution industrial in character rather than general. Accordingly, they say in the act of incorporation its object shall be as follows: "Instruction and practice in the use of tools, with such instruction as may

be deemed necessary in mathematics, drawing, and the English branches of a high school course." Here the "tool instruction" is put in the foreground as the object of the school, while other branches of instruction are added as merely auxiliary and subsidiary. The St. Louis scheme, on the other hand, puts the high school studies in the foreground, while hand work is made supplementary. But the Chicago school does not profess to teach trades any more than that of St. Louis. The circular announcing its opening says:

The school does not teach trades. Its aim is more comprehensive: it lays the foundation of many trades, and at the same time recognizes the value of intellectual discipline.

It is easier to admit that such a school, by its course of practical studies in mathematics and the natural sciences, lays the foundation of an industrial education than that its workshop instruction lays the foundation of many trades.

Baltimore Manual Training School.—Baltimore is the first municipality to establish a manual training school as an integral part of the public school system. The Baltimore school was established October 20, 1883, and opened in March, 1884. In organization and equipment it belongs to the St. Louis type. Its aims and purposes as set forth in its prospectus are identical with those of the Chicago school. Although this school does not profess to "teach trades," it claims to "lay the foundation for many trades." It seems to be the design of its managers to make it more of a technical school than its prototype in St. Louis; but it cannot be described either as a workshop in the school or a school in the workshop, as it divides the time "equally between manual and mental exercises." Candidates for admission must be at least fourteen years of age, and the intellectual qualifications required are about the same as those of the graduates of a grammar school. The fee for the use of books, stationery, tools, and a material will be at the rate of \$1 per quarter for each resident pupil, the fee for non-residents being \$12.50. The principal is Dr. Richard Grady, whose salary is \$1,800. The manager of the mechanical department has a salary of \$1,000.

The principal says:

Intellectually, our school stands side by side with the City College, from which it differs particularly in affording scientific instruction and actual practice in the care and use of tools.

A model apprentice school.—A manual training school is one thing and an apprentice school quite another. As yet we have, it is believed, no genuine example of an apprentice school, public or private, in this country. What is an apprentice school? In the first place, it is not a school for general education. It is not a school for a boy who is yet undecided whether he is to gain his livelihood by handicraft or by a commercial occupation. Its purpose is specific; its object is to teach one or more trades, not in full, not so as to dispense wholly with further shop ap-

prenticeship, but to make a real beginning of actual apprenticeship and carry it forward as far as practicable in a school. The shop work of the apprentice school is accompanied by such instruction in different branches of education as the apprentice ought to have if he were in a shop instead of a school. In an apprentice school the shop is the principal thing; the school instruction is supplementary and is especially adapted to the trade or trades taught in the shop; that is, a school is put into the shop. Briefly stated, the object of the apprentice school is to form the skilled workman. Accordingly, the hours of the apprentice school and the holidays should coincide with the hours and holidays of the journeyman mechanic. The apprentice's hardening to work should be begun at once. He is trained to endure drudgery with patience. The manual training school has been described as a school for instruction and not construction. A genuine apprentice school is a school not only for instruction, but also for construction. It teaches the use of tools, both abstractly and concretely; it does not stop, like the St. Louis school and the school of mechanic arts at the Massachusetts Institute of Technology, in Boston, with the abstraction of wood and iron work, but includes in its course the design and execution of perfected projects. But here the technical education *succeeds* the general education, instead of accompanying it.

How far trades should be taught at the public expense is an open question. This question every community must decide for itself. But public sentiment seems to be increasingly in favor of making a beginning in the way of supplying industrial education at the public expense; and in the light of foreign experience it would seem to be advisable that every city of the first class, and perhaps of the second class, should set up at least one apprentice school. In looking for a model school of this class for imitation in all essential features, though perhaps not in every minute detail, we must, in my judgment, go to Paris. The municipal apprentice school of that city, on the boulevard de la Villette, which was opened in December, 1872, was clearly the best of its kind in the world at the time of the Universal Exposition in 1878, and there is no reason to believe that it does not hold the same rank now. This school was not established in a haphazard manner, but on a plan thoroughly matured by Director Gréard, after a profound and exhaustive study of the subject, the results of which he embodied in a remarkable memoir published in 1872 and embraced in the French exhibition of education at the Vienna Exposition in the following year. The excellence and representative character of this school seem to render an account of it somewhat in detail desirable.

The school receives apprentices for the working of metals and of wood. Its object is to form workmen intelligent and skilful in all the parts of their trade. The duration of the apprenticeship is three years. The apprentices are divided into three sections or years, determined by the degree of apprenticeship.

The day comprises six hours in the shop for the first two sections, eight hours for the third; five hours in the school for the first two, three hours for the third.

The pupils are not boarded in the establishment.

The instruction is gratuitous and the pupils are furnished gratuitously with all the materials of study and work.

No pupil is admitted before thirteen years of age nor after sixteen years.

Candidates are received only upon the presentation of certificates of graduation in the elementary school or after an equivalent examination.

The pupils remain within the walls of the establishment from 7 in the morning until 7 in the evening, one hour, from 11 to 12, and a half hour, from 2.30 to 3, being allowed for dinner and luncheon and recreation. These hours are the same for every day in the week, except Sunday, and for all the seasons.

The instruction is divided into two divisions, shop instruction and school instruction, the latter being mostly technical in character. The shop instruction is, first, that of preparation, and, secondly, that of execution. In the preparatory course of the first year each pupil in rotation passes through the shops of wood and iron, performing a succession of elementary exercises. In this preparatory course each pupil in the class has charge of the engine for a certain number of days. The work of execution begins with the second year, when the choice of a speciality is permitted. Besides the shop for working wood and iron there is a department of precision, into which pupils of exceptional talent are admitted.

Instruction and construction are combined; the constructions are sold, but they are not made for sale; they are made solely for instruction, and only such constructions are made as are deemed necessary for the best training of the apprentices.

As the program of the school instruction is believed to be of special interest in this connection, it is introduced here in full.

French language.—Grammar, orthography¹—Completion of grammar, exercises in composition—Reports of visits to shops and factories.

English language.—Reading and writing, elements of grammar, exercises on the blackboard—Grammar (syntax), translations and themes, conversation.

Mathematics.—Arithmetic, plane geometry, measuring of surfaces—Completion of arithmetic, geometry in space, volumes—Descriptive geometry, applications.

Chemistry.—Elements of general chemistry—Industrial chemistry, applications.

Physics.—Elements of physics, general properties of bodies—Industrial physics, applications—The completion of physics and chemistry.

Mechanics.—Study of simple tools and of the elementary organs of machines—Elements of mechanics, simple machines—Steam engines, machine tools.

Technology.—None—Lessons on materials, their production, their uses—The foregoing completed; resistance of materials.

History.—The rudiments of general history—The history of industry—None.

Geography.—Elements of general geography, geography of Europe and of France—Industrial geography—None.

Drawing.—Freehand drawing, elements of graphic drawing—Geometric and industrial drawing—Drawing of tools and machines.

Law.—None first year—None second year—Elements of law relating to common life.

All the courses of the school are obligatory for all the pupils, the maximum number of whom is 150.

The buildings consist of four structures bounding the four sides of a spacious square interior court, namely, one for work in iron, one for work in wood, one for the school rooms, drawing rooms, laboratories,

¹ The dash divides the requirements of the different years.

and the préau couvert, or large hall for wardrobe, lunching, repose, &c., in common for the pupils, and one for the administration and miscellaneous purposes. Experience has proved that in this school the régime of manual labor, broken by intervals of rest taken in the open air and alternating with study, contributes alike to the physical force and to the intelligence and character of the pupils, among whom for five years in succession there was not a single death. This school has been eminently successful; its pupils are in demand at good wages. After it had been fully tested by some eight or ten years of experience, it was decided to establish several more of the same type, adapting the trades taught, so far as practicable, to the prevailing industries of the quarters of the city in which they were respectively located. It seems very desirable that a model school of this class should be established on this side of the water, either at public or private expense.

The New York apprentice school.—Though we have in this country no apprentice school of the class of the Paris school above described, we are able to record that at length we have one genuine apprentice school, very remarkable and original in character and located precisely in the community where it can do the most good. I refer to the apprentice school for teaching the most important of the building trades which was established in New York by Mr. Richard T. Auchmuty, an eminent building contractor.

This school is believed to be unique both in the kind of trades taught and in the regimen, though in its scope and aim it is similar to the Paris school. This school, or group of schools, does not profess to turn out thorough workmen, but to give a boy enough knowledge and expertness at a trade to enable him to make himself useful in a shop and by constant work to make himself perfect by practice. The trades taught are as follows: Masonry, carpentry, plumbing, plastering (including stucco work), painting (including fresco), wood turning, wood-carving, stone cutting, &c. For the accommodation of these schools, Mr. Auchmuty covered a whole block, measuring 200 by 125 feet, with one-story structures, well lighted and warmed. The accommodations are intended for three hundred apprentices. Admission to these schools is not limited to the founder's employés. The tuition fee is \$3 per month. The result of a course in the school is that a boy gets more actual instruction and handles the tools more than he would do if a regular apprentice at a trade. Last spring seventeen of the youthful pupils who had been doing mason's work got situations as journeymen at \$4 a day before the end of summer. There has been no lack of pupils and the school has been in all respects successful.

WHAT OUGHT TO BE DONE FOR INDUSTRIAL EDUCATION BY CITY SYSTEMS OF PUBLIC INSTRUCTION.

The term industrial education is here used in its broadest signification, as comprising all the technical education not belonging to the social professions and those relating to the fine arts.

As intimated above, the best thing that can be done for technical education is to make ample provision for a broad, liberal, and thorough general education. Mr. Matheson, the English commissioner who lately visited this country to examine into and report upon our technical education, attributes our remarkable success in mechanical and manufacturing industries to the high standard which we have maintained in our public elementary schools and to the general diffusion of higher education by means of our public high schools and other institutions for secondary instruction. Plainly he could not attribute it to the number and excellence of our industrial or trade schools, either public or private, that would be thought by any one to come within the range of a municipal school system, for such schools do not as yet exist to an extent sufficient to produce any appreciable result. And here a word of caution should be said against putting too much confidence in the current statements put in circulation by anonymous correspondents and superficial and irresponsible observers, to the effect that European countries are dotted all over at the crossroads with technical schools of every kind. Some countries, it is true, are in advance of us in this respect. In superior polytechnic schools, carried on directly by the central governments, the leading foreign countries are considerably in advance of us. And, indeed, within the range of secondary and elementary industrial schools, including trade schools, there is a considerable number of institutions of high merit well deserving our study and imitation; still, the truth is that, on the whole, within this range, the development and dissemination of industrial education is still in its infancy in Europe as well as in America. It would be a mistake, therefore, to undervalue and lower our standard of general education in order to make room for trade schools on the authority of good foreign example.

But without abating our zeal or contracting our scheme of provision for general education, there remains much to be done by our city school systems in providing that kind of instruction and training which fits persons, in part at least, for some particular modes of gaining a livelihood. The provisions for this purpose which seem desirable in the present stage of pedagogical experience and opinion are here briefly enumerated:

(1) A modification of the curriculum of elementary instruction which will render it better, not only for the purposes of general education, but also better as a direct preparation for many industrial pursuits. This modification consists, in brief, in throwing overboard a considerable mass of the useless details of some of the branches now taught, in applying more practical and comprehensive methods of teaching all the subjects, while always aiming at the shortest and most direct means of communicating and enabling the pupils to acquire useful knowledge, and at the same time ignoring processes and exercises merely for the sake of what is called symmetrical development of the mental faculties; thus making room for drawing (both freehand and mechanical), the rudiments of

book-keeping, the rudiments of practical geometry, physics, chemistry, and natural history, modelling and carving for boys, needlework for girls. I omit the workshop for boys, because I think that up to fourteen years of age the above studies, in connection with gymnastics, would be more profitable as a preparation for apprenticeship, and I think boys ought to complete their elementary education at fourteen years of age, and, if they have not, the more reason why they should not then divide school work with shop work.

(2) To teach girls, in all grades of public instruction, sewing and cutting and fitting, and besides, special schools should be established for instruction in the advanced branches of needlework, cutting and fitting, and perhaps millinery.

(3) To establish everywhere, in small cities as well as large, thoroughly equipped evening industrial drawing schools.

(4) Evening high schools should be widely disseminated, giving instruction in more or less technical branches, such as book-keeping, commercial arithmetic, stenography, practical geometry, drawing, &c.

(5) Evening schools devoted exclusively to technical branches, like those in France, elsewhere described.

(6) To establish in the larger cities one or more apprentice schools like that in Paris, on the boulevard de la Villette, above described.

(7) The establishment of simple manual training schools, as they may be demanded, like those in New Haven, Boston, and Peru, Ill., already described, for boys who have completed their elementary studies and for boys already in the grammar schools who wish to attend them out of school hours, whether in the evening or daytime.

(8) To establish in the larger cities manual training schools, after the pattern of the St. Louis school and the school of mechanics connected with the Boston Institute of Technology.

(9) The general establishment of schools of practical cookery for girls, after the pattern of those which have been so successful in the city of London.

SEWING.

No girl can be considered properly educated who cannot sew. If the art of sewing is an indispensable element of a girl's education, why should it not be placed side by side with reading and writing in the common school course of study? That instruction in this branch ought to begin in childhood cannot be doubted. It requires no costly shops, no special rooms even; the ordinary school room affords every requisite convenience. In the earlier stages of the course, at least, the regular teachers might properly give the instruction. The sewing hour affords the pupils agreeable recreation. Experience has proved that competent instruction in sewing can be given in school without any appreciable detriment to the other branches. Experience has also proved that, where there is no school provision for sewing, girls in large num-

bers fail to acquire the necessary skill in the use of the needle. It would not be strange, therefore, if we should find sewing to be a branch of common school education universally obligatory. And, in fact, it is found to be nearly universal. Unfortunately our own country still remains an exception. Notwithstanding there has been for several years a good deal said about rendering the instruction in our schools more practical, and notwithstanding no authoritative voice has been raised in opposition to the teaching of sewing in the public schools, this most useful branch of instruction is still practically ignored throughout the country. Scarcely a half dozen cities have been reported as having made even an attempt to introduce sewing into the public schools. The following are all that have come to our knowledge:

In Peru, Ill., a beginning has recently been made. At the time when the boys of grammar school No. 2 are in the workshop, the girls of that school have lessons in sewing. Each girl has a workbox, in which are thread, needles, a thimble, a pair of scissors, and a pin cushion. Just at present (March, 1884) these girls are all sewing on white aprons, which are cut from a somewhat elaborate pattern, and which, if well made, are to belong to the makers; but if any are not well made they are to be ripped up and made over again. After this they are to be taught other kinds of sewing, as well as darning and mending.

It was stated in the San Francisco Bulletin of February 13, 1884, that in the Lincoln School, Oakland, Cal., "girls will be taught to use the needle."

A beginning has been made in New Haven. The superintendent (Mr. S. T. Dutton) writes, under date of November 8, 1884:

We are not doing very much in sewing in our schools. It is taught in two ungraded schools only.

The school board of Philadelphia has made a beginning in this department of practical instruction in the most logical way imaginable by adding it to the course prescribed for the City Normal School. Of this matter the principal (Mr. George W. Fetter) writes, under date of November 17, 1884, as follows:

Sewing is an obligatory branch in this school. It was introduced a few years since by order of the committee. Every pupil is required to sew, and at the end of the year we examine all just as we examine in arithmetic, &c. At first they are taught plain sewing, then cutting and fitting and dressmaking. No fancy work is allowed. The last year the post graduate class are trained in the best way of teaching it, so that in the future our graduates will be able to teach sewing in the public schools. The work has been very satisfactory and successful, and ere long its good effects will be perceptible throughout our entire school system.

In Boston, the girls taught in the public schools have long enjoyed the benefit of instruction in sewing, and, strangely enough, this is the only American city of which this can be said. About fifty years ago the school board adopted an order *authorizing* the teachers of the girls

in the two lower classes of the grammar schools (there were then four classes in all) to teach plain sewing one hour in the afternoon of four days in each week. It does not appear, however, from the school records that this permissive order bore fruit.

The regulations adopted in 1855 contained a provision that "instruction in sewing may be given to all the pupils in the fourth class [lowest, containing about one-third of the pupils] in each of the girls' grammar schools whenever, in the judgment of the district committee, such a course shall be for the best interest of the school." Provision was also made for the appointment of special teachers of this branch who should "give to each pupil two lessons of not less than one hour each every week."

The transfer of the option from the teachers to the committees and the allowance of special teachers proved so effectual that in the next year sewing was taught in all the grammar schools except one. From that time this branch has been constantly advancing in efficiency and in favor among all the parties concerned. During the first ten or twelve years the progress was not rapid, nor was the course of teaching systematic, but nearly all the girls from eight to eleven years of age enjoyed the benefit of a useful course of plain sewing.¹ At length the time came for a new departure in this branch. The superintendent, Mr. John D. Philbrick, in his report for 1869, says:

It seems to me that it is high time to introduce some improvement in the management of this department. Those who saw the recent exhibition of the needlework of the pupils in Mrs. Dr. Batchelder's Industrial School, got some notion of what might be done in the sewing classes in our schools.

It was the force of public opinion, and of a very good public opinion too, which caused the introduction of sewing in opposition to the general wishes of the teachers; and, for one, I frankly confess that I hope public opinion will go much further in this direction. I will even go so far as to say that I should like to see the arts and mysteries of needlework taught in all the grades of our schools for girls, from the lowest class in the primary school to the highest in the girls' high and normal.

The large development of this branch thus virtually recommended has not yet been realized, although the movement towards it has been considerable.

In this report, the appointment of a special committee on this department of instruction was suggested, and four or five years later it was adopted. At the date of the report above referred to, in one school, the Winthrop (Mr. Robert Swan, master), besides the regular instruction in sewing, special lessons were given to a portion of the older girls with excellent results, the expense for material and tuition being borne by a public spirited lady, Mrs. Augustus Hemenway.

¹ Mlle. Marie Loizillon, inspectress general of maternal schools in France, in her recent report (1883) to the minister of public instruction on American schools, makes the twofold mistake of stating (1) that sewing was very recently (*tout récemment*) introduced into the public schools of Boston and (2) that it was by the ladies on the school board (*l'élément féminin dans le bureau d'éducation*) made obligatory and placed on the same footing as the other studies.

During the same year it was made evident in the Bigelow School that, by good management, admirable results could be produced in the lowest grades. The master (Mr. Henry O. Hardon) laid down the following rules to be observed:

(1) No scholar is to be excused for not attending to sewing in sewing time, no matter how good instruction in that department she may claim to receive at home.

(2) All work is to be left at school till its completion and put into baskets prepared for the purpose, each girl's work having been first wrapped in her sewing wrapper or put into her sewing bag. To collect and distribute these parcels is the work of a moment, and all the materials are then on hand and no time is lost.

(3) A report to be kept of each girl's work, in tables prepared for the purpose in a suitable blank book. (To *finish* a piece of work to carry home to mother now is an object of ambition, and so it is to stand well in the report.)

(4) When practicable, having noticed common failures in style or execution, instruct the class as a body in the best methods of performance.

The capable sewing teacher (Mrs. Eliza Cleary), aided by the hearty coöperation of the regular teachers, efficiently carried out this judicious plan. During the first four months of the experiment, the pieces of work done by the pupils, about two hundred and fifty in five class rooms, amounted to nearly sixteen hundred. A detailed report of the plan and its results was sent to the superintendent, and thus was commenced the system of reporting in detail the sewing work done in the several schools, which has proved to be highly beneficial in promoting success in this branch. This example was not lost upon the other schools. In the next year, 1870, the board made sewing *obligatory in every girl's school*—it had been kept out of one or two at times—and extended it to the three lower of the six classes (classification of 1868), comprising about two-thirds of the pupils in this grade of schools, provided that not more than six divisions should be taught in any one school—division meaning the scholars in a separate room under one teacher.

This was the outcome of the report of a second special committee on industrial education, both of which had limited their recommendations mostly to the enlargement of the department of sewing in the girls' grammar schools. The second committee went so far as to recommend that instruction in this branch be given in all the classes except the first and second, and that in the third and fourth classes instruction in cutting and fitting be added. About two years later a third special committee (Rev. Dr. S. K. Lothrop, chairman) on the subject went so far as to recommend the extension of instruction in sewing into the *three upper classes* of the grammar schools, and they proposed an important enlargement in the character and practical instructions given, in recommending that practical instruction in cutting, fitting, and thoroughly making children's and ladies' garments should be given to members of the first and second classes of the girls' grammar schools. And they further recommended that a sewing teacher thoroughly competent to give this instruction should be employed in each girls' school, giving her whole time to this service, and that for the purposes of this instruction the necessary

material be furnished at the expense of the city to an extent not exceeding \$200 to each school and not exceeding \$50 to any one division.

This advanced and comprehensive plan, which was not adopted, and which has not even now been fully accepted and carried out, was doubtless largely inspired by the decided impulse which had been given to the teaching of sewing during the two or three years following the new departure above referred to. The superintendent had given it his special attention, as appears from his report of 1872, in which he reiterates his view in favor of extending sewing to the three upper classes; gives the statistics showing that it was taught, in eighty-four divisions, to 3,948 girls, at an expense of about \$8,000; gives a detailed report of the year's work done, in one school amounting to 4,268 pieces, as a model for the reports which he solicited from all the schools; presents an account of the first meeting of sewing teachers at his office, at which a committee was appointed to prepare a graded program of the work to be done and it was unanimously agreed that there should be an annual exhibition of the needlework of the pupils in each school where sewing was taught, at the time of the usual annual exhibitions of those schools, and the suggestion was made that it would be well for each teacher to send to the superintendent an annual report of the work done by her pupils; states that accordingly in several schools very creditable exhibitions of sewing had been held and that carefully prepared reports of work done had been already sent in by about one-half of the teachers; recommends that the school board appoint a competent committee of ladies to examine the instruction in sewing and report thereon; informs the board that in a quiet and informal way a recent inspection had actually been made of the sewing in several schools by a committee of the Woman's Education Society, who reported that they "found sewing well taught in the fifth and sixth classes of our grammar schools and in one visited (the Wells) in the lowest division of the fourth also," and made valuable suggestions for the improvement and extension of teaching sewing; and the report of the superintendent further says: "A new interest has been awakened in regard to sewing, both among teachers and pupils. Whenever I ask the classes of girls who are employed with their needles if they like their sewing lessons, I always get an emphatic answer in the affirmative. The teachers seem anxious to systematize and improve their plans of instruction and to carry forward their pupils to higher grades of work than they formerly attempted." The committee of the Woman's Education Society in their report above referred to strongly recommend a *general* yearly exhibition in addition to the local exhibitions in the local schools, already inaugurated.

In the mean time an interesting experiment in teaching advanced work to a division of girls too old for the primary school and not qualified for the grammar, in charge of Miss Elizabeth P. Emmons, on Tyler street, was in progress, the tuition and materials being paid for by Mrs. Hemenway.

Thus the board was at length induced to take another important step in the development of hand work for girls by voting in 1873, at the request of the committee on the Winthrop School, with the zealous coöperation of the master, to allow sewing to be taught in all the classes of that school, the upper class to be taught also cutting and fitting; and the instruction thus extended has continued in that school without interruption to the present time. Before the end of the school year the pupils in the upper class had cut and made dresses for themselves. A public exhibition in the hall of the school building of the work of the pupils in all the classes soon followed, attracting much attention. At the same time the fourteen school rooms, filled with happy, bright girls, might be seen busily engaged with their great variety of needle-work; the girls in the upper class in the mean time, a number of them being clad in dresses cut and made by their own fingers, were occupied in cutting and fitting dresses and illustrating the process by diagrams on the blackboard. Altogether the experiment showed the most gratifying results, and the next year the superintendent remarked in his report, as follows:

The carrying out of this plan in all the girls' schools is now evidently only a question of time. Already the example of the Winthrop School has been followed since the beginning of the present school year by the Gaston School. The time has come when, probably, there will be no opposition in the board to a general order permitting the same thing to be done in all the girls' grammar schools. The extension of instruction in this branch need not involve an increase of expense, as the regular teachers might be required to assist the special.

Although this was giving to the board, as the sequel proved, too much credit, nevertheless sewing continued to make its way so well that it was creditably represented in the Boston exhibit at the Centennial Exposition in Philadelphia by at least six schools, each sending a large portfolio filled with admirable work. In the mean time the board had taken another step in advance by providing for a standing committee on sewing, charged with a general supervision of this branch and the duty of submitting an annual report on its condition and progress. To this provision is due to a large extent whatever has been done to increase the efficiency in teaching sewing during the last decade.

The employment of special teachers of sewing having been pronounced illegal by the city solicitor, an act of the legislature was procured (approved February 1, 1876) authorizing the school committee of any city or town to require the teaching of sewing in all the public schools thereof. At about the same time the school board removed the restriction of the teaching of sewing to six divisions, which had operated unequally and to the disadvantage of the larger schools where the six divisions did not comprise the whole of the three lower classes. At the same time the regulation on this subject was amended by providing that sewing may be extended into other classes by the board on the joint recommendation of the committee on sewing and the division

committee of the school where such extension is proposed. This, however, does not seem to be a step in advance, as the effect was to tie up the hands of the board, whereas, previously, the board had been free to extend sewing into the upper classes without such limitation. In 1877 the standing committee report that the total number of articles made in all the schools during the year amounted to 72,721, and remarked: "But only those who have inspected the work shown at the various exhibitions of sewing can appreciate fully how much reason we have to be pleased with the results accomplished in this direction. The neatly-set stitches, the nice and exact finishing, and the variety in the kinds of work done bear testimony both to the faithfulness of the teachers and to the attention and interest of the pupils." It is a curious fact that the number of articles made each year since has varied but slightly from the figures above stated. It appears from the latest report (September, 1883) of the standing committee on this branch that the work accomplished not only furnished satisfactory materials for the annual exhibitions at the various schools, but that it is also thoroughly appreciated in the homes of the children, where the practical value of such instruction to girls of all classes is often very obvious and its assistance to the many to whom needlework affords a livelihood is inestimable. It appears that the exhibitions have lost none of their attractions by repetition; on the contrary, interest in them increases from year to year; more persons visit them and much satisfaction is expressed by the parents and friends of the pupils and visitors generally with the results there presented for public inspection.

Interesting proofs of the practical value of this industrial training are abundant. By the skill of the needle thus obtained, young girls fresh from school are enabled to find steady and remunerative employment. Many, while yet in school, are rendered capable of keeping their own garments and those of younger sisters and brothers in good repair, where before there had been rents and rags.

Many graduates of the schools, now occupying advantageous positions, attribute their skill in fine needlework entirely to the teaching received at school.

The progress realized during the last eight years may be summed up in two items: (1) The removal of the restrictions of this branch to the six lower divisions, which had kept it out of a few divisions in the larger schools; (2) an improvement in the average quality of the work. It is discouraging to be obliged to report that so little ground has been gained in carrying needlework into the three upper classes, only one school added during the last ten years, the number standing three at the present time. If, therefore, during these thirty years of effort and experiment a good work has been accomplished, much still remains to be done. The number of sewing teachers employed is twenty-seven, the salary varying with the number of divisions taught: for the first division, \$108; for over eleven divisions, \$744.

The following account of the order of instruction and practical management in the school where it was first carried up through all the classes will be, it is believed, especially valued by those who are interested in propagating this branch of education.

Instruction in sewing for the last ten years has been given throughout the Winthrop School by a teacher employed for that purpose, who devotes the same time as the other teachers and receives similar compensation.

The divisions of the sixth, fifth, and fourth classes have two lessons of an hour each per week; the third and second, one lesson of an hour. The girls of the first class are taught to "cut and fit" by measurement and draughting.

The material is brought from the homes; the work is prepared by the teacher and is kept at the school in a large work basket (one being supplied for each class). When completed it is examined by the regular teacher of the class, and, if satisfactorily done, is given to the child to take home. If from any cause a scholar is without the proper material, it is furnished from a supply procured from a charitable society; but in such cases the garment is not given to the maker, but is returned to the society. With this rule there is no difficulty in procuring material without expense to the city, except some thread, needles, and thimbles for emergencies. Cases frequently occur where very poor children save their pennies and thus procure the needed work.

The following is the order of instruction:

Back stitching, hemming, top-sewing, overcasting, running, felling, gathering, stroking gathers, hemming on gathers, button holes, sewing on buttons, mending; darning, basting, flannel stitch, herring bone stitch, feather stitch, cutting.

As it is desirable that the instruction shall be such as to accomplish the most good, not only to the children, but also in the homes whence they come, the pupils are encouraged to bring garments and other large pieces that can be utilized in the family, thus relieving the mothers from many weary hours of night work and at the same time giving opportunity for the best quality of instruction.¹

The present regulations for the department of sewing in the public schools are as follows:

(1) Two hours a week, as appointed by the regulations of the school committee, shall be given to each scholar of the fourth, fifth, and sixth classes of the grammar schools, one hour at a time, for instruction in sewing. This time should not be shortened for other studies or examinations, or any other purposes, without the consent of the committee on sewing especially obtained.

(2) Each scholar shall be requested to bring work from home prepared as far as possible. But in any case where it is not so provided the sewing teacher will be expected to have work on hand, that there may be no excuse for an unoccupied hour and that time may not be wasted in sending home for work.

(3) A sufficient supply of needles, thread, and thimbles shall be kept on hand by the sewing teacher to furnish to any child who is without them, from carelessness or inability to supply them, or who has not the proper needle or thread for her work.

(4) The sewing teacher is requested to make all preparation and fitting of work out

¹ From information furnished by Mr. Robert Swan, master.

of school, that she may give the whole of the hour to the oversight of the work. Any fitting that requires time should be laid aside, to be attended to out of the hour, and other work supplied in its place.

(5) Every effort should be made to vary the instruction, that every girl may learn thoroughly the varieties of work. If she has learned one kind of work, the sewing teacher is requested to furnish her with some other variety of work, that she may be made efficient in all kinds of work. In this way patchwork should be discouraged after a scholar has learned thoroughly what can be learned from it. Every effort should be made for promotion in work from plain sewing, through the darning of stockings, to nice stitching and button holes, from the simpler to the more difficult, in order to give an interest and desire for perfection in such work. It is a good plan to keep pieces of cloth for practice in making button holes, stitching, or any other special work which can be given wherever there is want of work, or if other work has been completed in the course of the hour, or to carry out the idea of promotion.

(6) The sewing teacher may find assistance from any charitable society with which she is connected which would willingly furnish garments prepared and fitted, to be returned to the society when completed; or she can suggest to any scholar who has not provided material for her work that she may show to her mother the garment she has finished at school and offer it to her for the price of the material. Many a mother would like to buy such a garment for its use or for a specimen of work, if it is well done.

(7) The regular teacher of the class is expected to take entire charge of the discipline of the class, as she is more thoroughly acquainted with her scholars; also, to see that the work is distributed promptly at the beginning of the hour, either by herself or through monitors, and to assist in keeping each scholar diligently occupied through the sewing hour. It is recommended that she should give credits or marks for efficiency or inefficiency in sewing, in the same manner and according to the methods pursued in other lessons in her class.

In the mixed schools, when girls are taken from one or more classes to form one division, the boys of these classes can be put under one teacher, while the other takes charge of the class in sewing, and these teachers can alternate in their duties.

In presenting thus fully the main facts relating to the progress and development of sewing in the only one of our cities where it has been generally and thoroughly taught in the public schools, it is intended to emphasize the importance and utility of this branch of elementary instruction, which is so strangely ignored in the current pleas for a practical education, while at the same time making more easily accessible such information on the subject as may be desired by those who may engage in its investigation.

But we must go to foreign countries if we would learn the true place and the utility of needlework as an element in female education. If we go to Berlin, or Vienna, or Paris, we shall find that every girl in the elementary public school is systematically taught sewing, not in a part of the classes but in every class. From these great capitals down through all grades of municipalities to the humblest village on the continent of Europe, where girls are taught reading, writing, and arithmetic, as a rule they are taught sewing equally well. In the noble high schools for girls, which I visited ten years ago in Hanover and Berlin, the girls were required to give to needlework four hours a week; and at the fine normal school for girls, installed in an ancient palace in the beautiful capital of Hungary, there was a plentiful supply of American

sewing machines and the directors showed the handwork of the pupils with no little pride.

It is safe to say that all the graduates of the female seminaries in all German-speaking countries are perfectly able to do their own sewing, knitting, embroidery, &c., and to successfully conduct a class in these branches.—(C. H. Pluggé, in Report of the Commissioner of Education for 1879, p. ccciv.)

An interesting feature of the girls' schools (Paris) is the manner in which the various branches of the art of the seamstress are taught. Two and three hours a week are devoted to progressive exercises in sewing through the course of three years. In the superior course the girls are obliged every Thursday to follow a regular course of instruction, given by special mistresses, in cutting and fitting. Each lesson is for three hours. The girls are very bright at these exercises. One is called out to measure another, as for a dress; she gives the proper numbers to a third, who writes them on a slate or blackboard. A fourth glances at these figures and immediately begins to cut a pattern. A fifth girl then takes the pattern and fits it to the person for whom it was intended. The rapidity of the action and the accuracy of the result are quite interesting to witness. There can be no hesitation in speaking of this branch of education for girls of every station in every community with the highest commendation.—(From the very valuable official report on education, as United States commissioner at the Universal Exposition at Paris, 1878, by General Joshua L. Chamberlain, ex-president of Bowdoin College.)

By "superior course" in the above extract is meant the upper third of the elementary school program. The instruction in cutting and fitting was given in this course on the weekly holiday, Thursday. The expense was at first defrayed by contributions from friends of the schools. So great was the favor with which this instruction was received that children were allowed to remain another year in school in order to secure the advantage of it.

The success of this experiment in advanced needlework was such that the administration organized central classes for giving this instruction in each of the twenty arrondissements of the city, where on each Thursday, either in the morning or the afternoon, girls belonging to the superior course could receive a weekly lesson of three hours. The instruction is at once theoretical and practical; the rules upon which it rests are illustrated upon the blackboard. The measures for the cutting of the garment and the arrangements for the fitting are the object of a mathematical diagram or a demonstrative explication. The pupil proceeds to the execution of the work only after the preparation has been reasoned out and understood. These central classes were established in 1878, and the director of the city schools, in his report of that date, expresses the opinion that it will be necessary to establish a class for this advanced work in each school.

The public school system of Great Britain, which has made such rapid strides since its establishment (1870), has followed the example of the Continent in respect to this branch, Professor Huxley setting the example in placing "plain needlework and cutting out" on the list of essential subjects for girls' schools in his scheme for studies submitted to the London school board.

The most important practical conclusions on this subject arrived at by the writer are formulated in the following propositions:

(1) No girl can be properly educated who cannot sew. It would be a waste of time to demonstrate the importance of this part of a girl's education.

(2) If this education were left to the homes it would be imperfect or wholly neglected, especially in the homes where it would be of the greatest practical utility.

(3) That sewing should be an obligatory branch of instruction in all elementary public schools where girls are taught is both desirable and practicable.

(4) The instruction should begin with girls when about eight years of age and continue throughout the elementary course, from one to three hours a week being given to the lessons.

(5) The course of instruction should be graded, beginning with plain sewing and mending and advancing to cutting and fitting.

(6) The regular teachers might give the instruction in the lower grades, the employment of special teachers being limited to the upper classes.

(7) Ability to teach sewing ought to be reckoned among the essential qualifications of a teacher of girls in the lower classes of elementary schools.

(8) In large cities regional classes should be established, after the plan in Paris, for instructing in advanced needlework girls who have graduated from the elementary schools and others qualified for admission.

(9) In cities of the first magnitude, and perhaps those of the second also, the system of instruction in sewing should culminate in a central school for teaching the most advanced stages of practical needlework, including dressmaking and millinery.

GYMNASTICS.

Within the last twenty or twenty-five years the physical exercises commonly called free gymnastics have been introduced into a great number of city schools. By free gymnastics is meant such exercise of the muscles of the limbs and trunk as is practicable without the aid of any apparatus whatever. These exercises are taken by pupils either in their seats or in a standing posture; and marching, which may be regarded as an exercise in free gymnastics, is much practised. To a certain extent simple apparatus, such as wands and dumbbells, mostly of wood, are used. In some cities use has been made more or less extensively of a system of vocal gymnastics. This system comprises the special exercise, development, and training of the muscles employed in respiration and the production of vocal sounds. It aims particularly to promote expansion of the chest and the habit of fully inflating the lungs in breathing. All these physical exercises are good in theory and good

in practice too if given with skill and discretion by the teachers. It is desirable that some form of free gymnastics—that is, the most appropriate muscular exercises without apparatus, which are sometimes called calisthenics—should be introduced into schools of all grades. Great care should be taken, however, that the exercises should be of the right kind and taken in the right way. They should be supervised and directed by competent experts.

But physical exercises of this description are not sufficient; no city system of schools can be considered as up to the standard of the day that has not gymnasiums and teachers of gymnastics sufficient for the pupils of all grades. It is to be regretted that no one of our American cities can be named where such provision exists. A few high schools, as elsewhere stated, are provided with commodious and well equipped gymnasiums, but high school gymnasiums of this class, or indeed of any description, are few and far between, while gymnasiums for grammar and primary schools are, it is believed, wholly wanting. This is a grave defect in our city systems of education. It precedes logically the hand training about which so much is said at present. If the history of education has made anything certain, it has made it certain that the gymnasium is an essential appendage of the school-house. It is well known that Germany took the lead in making gymnastics one of the branches of public instruction. Physical training was introduced into the public schools of Germany in the early part of the present century as one of the essential means of the regeneration of the nation. After Sadowa the statesmen of Austria followed the example.

For more than sixty years gymnastic training has constituted a prominent element in Prussian school education. Jahn, the great early promoter of physical training in Prussia, is now justly reckoned among the benefactors of his country; and, in recognition of the benefits of his labors, a noble statue has been erected to his honor in Berlin. In Berlin gymnastics have been longer and more generally cultivated perhaps than in any other city. In this city there has existed for a long time a large and well appointed government establishment for the training and preparation of teachers of gymnastics for the public schools. Although Vienna has been comparatively tardy in adopting this educational improvement, she now probably surpasses all other cities in respect to liberality of provision for gymnastics. In every recently erected school edifice, whether for elementary or secondary schools, the spacious and lofty gymnastic hall, with adjacent wardrobes and other accommodations, is provided. There are at present 110 special teachers of gymnastics constantly employed by the city in public schools. The educational authorities of Vienna are fully justified in their large expenditures for physical training, in view of the acknowledged advantages which have been derived from it in Northern Germany.

In speaking of physical training in the German schools, Matthew Arnold says:

The teachers [of gymnastics] profess to have adapted their exercises with precision to every age and to all stages of a boy's growth and muscular development. If boys have long work hours or if they work hard, gymnastics probably do more for their physical health in the comparatively short time allotted to recreation than anything else could. In England the majority of Public School boys' work far less than the foreign school boy, and for this majority the English games are delightful; but for the few hard students with us there is in general nothing but the "constitutional," and this is not so good as the foreign gymnastics.

In the German and Austrian schools gymnastic training is not provided for boys alone. Girls also receive the benefit of regular physical exercises especially adapted to the different stages of their muscular growth.

I have long been impressed with the lamentable defect of our city systems of schools in respect to physical education. After seeing what has been done for this essential branch of education in Vienna and Berlin, our own deficiency in this respect seems tenfold more glaring. A radical reform is needed. Twenty-four years ago I began my efforts to introduce into all grades of the Boston schools "a thorough system of physical training as a part of school culture." Some progress has been made in this direction. For some years the program has required daily physical exercises in the schools; but as yet our provisions for physical education are very inadequate. So far as I know, there is not a single special, thoroughly qualified teacher of gymnastics employed by any city in America.

To my mind nothing is more certain than that the highest success in intellectual education can be reached only by the aid of the most thorough system of physical training.

During the ten years which have elapsed since the above sentiment was expressed in one of my reports physical culture appears to have made but little progress in our public schools. In the mean time the French Republic, following the example of Austria in borrowing this element of popular education from her victorious foe, has by statute made instruction in gymnastics obligatory in all her public schools. When the bill for this provision came up for discussion it met with no opposition of any account, and was passed both by the senate and chamber of deputies with almost entire unanimity.

FIRE DRILL.

The disasters which have been caused by fire panics in large schools have suggested the generally known precautions of fire proof furnace and boiler rooms, fire escapes, safe staircases, and the outward opening of the main doors of entrance. But these will be of little avail in a panic without discipline, and presence of mind on the part of the teachers, and especially of the principal. The fire drill, which has been introduced more or less extensively, is not only an effective safeguard against the danger of panics, but also a good gymnastic exercise. The

¹ Boys in the great secondary schools, Eton, Rugby, &c.

fire drill in the city of Rochester, as described in a recent report of the superintendent of the schools of Springfield, Mass., is a good example for general imitation. He says:

At a given signal, which is heard through the building, all the pupils in every school room rise instantly to their feet, form in line, as they have been previously instructed under the direction of their teachers, and pass rapidly, in double lines, down the stairways and out into the yard, those on the first floor going out first and those on the second and third following in order. Upon reaching the yard they form into lines again facing the building, ready for further orders. The pupils all understand perfectly the order in which the occupants of the different rooms are to fall into line in the hallways and by what stairways and doors they are to pass out of the building. This exercise originated, I believe, in an attempt to provide a rapid, orderly, and safe exit from the building in case of an alarm of fire or of a panic of any kind; but it is now used also in many places as a pleasant and safe kind of recreation. In cold and stormy weather it can be carried out, partially at least, in sections, in the hallways and basement.

As I saw the fire drill in the Rochester schools, it seemed to me to be an admirable example of what can be accomplished for a good purpose by thorough discipline and drill. One of the most remarkable things about it was the rapidity with which it was performed. Many of the school-houses at Rochester are larger than those in this city, and in this exercise their buildings are usually cleared of all their pupils in about a minute from the time the first signal is given.

In one instance, in which I timed the movements by my watch, 625 pupils passed into the yard in 40 seconds. And yet there was no confusion, no crowding, nor pushing, nor stumbling, and no loud talking; but the pupils gave unmistakable evidence in their faces that they greatly enjoyed the drill.—(Report of 1883 by A. P. Stone, LL. D.)

At Denver the ordinary movement of the pupils at recess in all the schools is similar to that of the fire drill above described. There is some danger that in case of the older girls this rapid movement may be injurious; pupils having any special weakness should of course be excused from it.

In the schools of the city of Vienna measures have been taken to insure the emptying of the class rooms without disorder in case of fire. The pupils are trained for this manœuvre, which is executed in three different ways, according to the degree of urgency, on signals given by the instructor. In the case of a fire in the neighborhood (signal No. 1) the children place their books in their satchels, put on their outer garments, and leave the class room in groups of four. If the danger is imminent (signal No. 2) the books are left, the outer garments rapidly put on, and the class room is left as before. Finally, in case of extreme peril (signal No. 3) their books and clothing are left and the exit is made immediately in groups. According to an experiment made recently at the Bürgerschule of the Werderthorstrasse, twenty class rooms, containing a thousand children, were vacated in ten minutes without the least disorder.

MILITARY DRILL.

Military drill became an element of public instruction in Boston in 1864. It was at first tried in the Latin and high schools for boys, and

also in the upper class of two grammar schools for boys. As the result of the experiment during the first few months, it was decided to discontinue the drill in the grammar schools, but to retain it in the high schools for boys. During the twenty years since elapsed there has been constant progress in this branch. The present school regulations provide that instruction in military drill shall be given by a special drill officer, in the high schools, to boys of good physical condition who are thirteen years old or more, the time not to exceed two hours per week.

Drums, muskets, and belts and swords for officers are provided at the expense of the city. The boys provide their own uniforms, which are neat but inexpensive. The grand drill hall and armory in connection with the Latin and English high schools is elsewhere described.¹ The same admirable instructor (General Hobart Moore) has been employed since the beginning.

The school regiment consists of three battalions and twenty-five companies. There is an annual exhibition of the proficiency of each battalion, which never fails to draw a crowd of interested spectators.

To say nothing of the value of this instruction as a means for the preservation of public order and for the national defence, as an educational instrumentality, in promoting physical, moral, and intellectual culture, it has been signally beneficial. It has proved a valuable, though perhaps not a perfect, system of gymnastics; it has developed a more manly spirit in the boys, invigorated their intellects both directly and indirectly, and made them more graceful and gentlemanly in their bearing.

Instruction in military drill is given to high school boys in several other cities and large towns in Massachusetts.

From my observation of the beneficial results of this branch of instruction, I feel justified in strongly recommending its general introduction.

GRATUITOUS INSTRUCTION.

Gratuity of instruction is a feature of our school system, for which we may claim a merit of a peculiar character. It is true that the materials of instruction, such as text books and stationery, are as yet furnished at the public expense only in exceptional cases and in certain localities, but nowhere in our thirty-eight sovran States, either in city or country, is the child met at the school-house door with a demand for the payment of a school fee. Tuition in all public schools, whether elementary or high, is with us absolutely gratuitous.² Public schools are free schools. This is, without doubt, the distinguishing character-

¹ See the subject "School architecture."

² In Baltimore, there is a partial exception to this universal rule. Here the pupils pay \$2 per term, nominally to defray the expense of text books; but this is, in reality, three or four times as much as would be required for that purpose.

istic of our system, and that of which we have the greatest reason to be proud. Not that free public schools do not exist elsewhere, but here for the first time the principle was adopted that it is the right and the duty of the State to provide free instruction for all the children of the people, and for this purpose to hold all property subject to equal taxation; and here this principle has been practically tested on the largest scale and under the greatest variety of conditions. Hence, I placed on the wall above our educational exhibition at the Universal Exposition in Paris, in bold gilt capitals, the legend, in the French tongue, "Public instruction is free in all the States of the Union,"¹ as the one grand educational lesson which America has a right to offer to all nations. This is not the occasion for tracing the progress of the adoption of the principle of free public instruction by the several States or for adducing reasons to justify it; for its success is its all-sufficient justification. The old threadbare arguments in opposition, about weakening parental responsibility and impairing parental self respect and lessening the value of instruction in parental eyes and overburdening the taxpayers and making the provident pay for the improvident, have been refuted by experience; moreover, the adoption of gratuity has always been followed by an increase of attendance. It is now quite evident that gratuity of instruction is not a mere temporary expedient resulting from a primitive state of society, to be abandoned as we advance in civilization. Our universal gratuity of instruction is a joint evolution of our democratic institutions and our advancing civilization. All civilized countries are marching in the same direction. With the advancement of civilization and the democratical sentiment, gratuity of public instruction becomes more and more prevalent. Elementary schools are substantially free in Australia, Switzerland, Sweden, and Denmark. In France all common schools have recently been made absolutely gratuitous, in obedience to the will of the people. In Great Britain the victory is not far distant, and the recent triumphant extension of suffrage will no doubt hasten its consummation. Mr. Francis Adams, an excellent English authority, in speaking of his own country, says:

We have no longer to contend about the principle of free education; that has been admitted by all educational legislation during the present century. What remains for us to consider is the policy of retaining the small contribution now made by parents in the shape of school fees. Our legislators have swallowed the camel and are now straining at the gnat, a process which it is to be hoped will be of short duration.

For some years past the enemies and the illiberal friends of free public schools have been coöperating in the effort to limit gratuity of instruction to the elementary day school; hence they have opposed the

¹ Many a French peasant in his blouse, on reading this legend, turned his hard, sun-burnt face, lighted up with a gleam of joy, to say, "*Même chose chez nous bientôt;*" and the prophecy was soon fulfilled.

maintenance of evening schools at the public expense, especially evening drawing schools and evening high schools; for the same reason they have objected to the establishment of Kindergärten. But their heaviest guns have been brought to bear on the free public high school. They have persisted in trying to create a popular sentiment in opposition to the high school by representing it as a contrivance of the rich to rob the poor. But all these adverse efforts have been unavailing. All the attempts to restrict the application of the principle of gratuity have utterly failed. During the period of this special opposition the free high school has advanced more rapidly than in any other period of its history.

When the principle of free public instruction is once admitted there is no possibility of drawing a line and saying beyond this it must not go. The free common school of the people means the free high school of the people and the free college of the people. They are all necessary for the well being of a democratic society. On this point a former president of Harvard University, Edward Everett, in pleading for a legislative grant to that institution, used this language:

I will thank any person who can do so to draw the line between them [elementary and higher education]; to show why it is expedient and beneficial in a community to make public provision for teaching the elements of learning and not expedient nor beneficial to make similar provision to aid the learner's progress towards the mastery of the most difficult branches of science and the choicest refinements of literature. * * * The assertion that school education is the interest of many and college education the interest of the few is founded in a great fallacy. * * * A good college education for those who need it is just as much the interest of the many as a good school education. They are both the interest of all, that is, the interest of the community.

The principle of gratuity, which has become the characteristic feature of the American system, was not generally adopted at the outset. In its progress it has had to encounter formidable obstacles. It has had to contend against the opposition of aristocratic prejudice, sectarian interest (so universally opposed to liberal State provision for public schools), the short-sighted selfishness of capital, the blind ignorance of the classes most benefited by it, and the erroneous views on the subject of many real friends of popular education. Thus far it has in every contest triumphed over all opposing forces; and, judging from the past, it is reasonable to infer that it will not only maintain its present ground, but make further advances in providing free infant schools, evening schools of different descriptions on a far more liberal scale, industrial day schools, and, finally, free instruction of the college grade.

FREE TEXT BOOKS AND STATIONERY.

Gratuity of text books and stationery is the natural and inevitable sequel to gratuity of tuition. Indeed, a system of instruction cannot be properly reckoned as free which does not supply free books as well as free

tuition and free accommodations. Something may be said to the purpose against every possible arrangement. The opponents of this provision tell us that it is communism: the only proper answer to this charge is that gratuitous instruction is in exactly the same sense communism. They say that it is detrimental to the development in the pupils of the spirit of self reliance. To this assertion the reply is that the same objection has been urged against free tuition, but experience has shown it to be without foundation. Moreover, it is said, the pupils will not take proper care of the books which they do not own. Experience refutes this assertion, too. In fine it is claimed that it is a good thing for pupils to own their books and keep them after leaving school as mementos and for the purpose of reference. This is no doubt a just claim, but it is of little importance compared with the great advantages of free books. The two chief arguments in favor of free books are (1) the economic consideration: the saving of expense and the great saving of the time of the teachers and pupils; (2) the moral consideration: an invidious distinction between the children of the well to do and the indigent, as far as school provision is concerned, is obliterated. The policy of furnishing free books was long ago adopted by New York. Its success here has led to its adoption in a number of other cities, and it appears to have been generally approved wherever it has been applied. In Philadelphia the average yearly cost for each pupil has been less than one dollar. At the recent session of the legislature of Massachusetts, 1884, an act was passed requiring all the towns and cities in the State to furnish all the pupils in the public schools with free books and stationery.¹ There is, however, one danger to be guarded against to which the free book system is liable, namely, that school committees may be tempted to permit the principals of schools to select text books from an approved list, as is the case in New York City, instead of requiring an absolute uniformity in all the schools of the same city or town. The Massachusetts act referred to is defective in not embodying this safeguard. There can be no doubt that ultimately gratuity of school books will be co-extensive with gratuity of tuition, as they rest on one and the same foundation and a conclusive argument in favor of one is equally conclusive in favor of the other.

Remove all possible distinction between the children of the rich and the children of the poor man. Let the children go into the school-house that is free for all of them. And the teachers—they, too, are free, certainly. But why withhold the books? So the legislature said there shall be free text books for all the children of this Commonwealth. Those are good things and they are in the laws.—(Extract from a speech by His Excellency George D. Robinson, governor of Massachusetts.)

ECONOMY.

Good educational advantages are nowhere cheap, and it is wise to assume that good schools must, in the nature of things, be costly schools.

¹The immediate result of this legislation has been to largely increase the number of pupils entering the high school.

It is not necessary to admit, however, that schools are uniformly good or bad in proportion as they are dear or cheap. There is large scope for economy in the administration of a school system. An examination of school reports makes it apparent that school boards differ widely from one another in respect to their ideas of what constitutes true economy in the management of school affairs. Some boards seem to be ambitious to prove that they are educating pupils at the lowest cost per capita; and, accordingly, they publish in their reports comparative tables, showing that the schools under their charge are carried on at less expense than those of other cities selected by them for comparison. Some boards and superintendents are constrained to make such exhibits, doubtless, to silence the clamor of illiberal taxpayers against what they call extravagance in the maintenance of public schools. But in the more advanced communities the school boards very generally assume that it is their first duty to provide schooling of a very high degree of excellence rather than to run the system at the cheapest rate per scholar. It is pretty safe to assume that cheap schools are poor schools; but, on the other hand, it is not true that the cost of instruction per capita is a sure indication of the value of the instruction afforded. In a wise administration, while the best education is aimed at, or, at any rate, a reasonably good quality of education, at the same time, in every part of the service, care is taken that every dollar of the school money is turned to the best account. The appropriate legend to be placed over the door of the school board hall is, "Good schools for all; not a dollar to be wasted." From the mere fact of high or low cost per capita of a school system, no inference can be drawn as to the merit in the economic point of view of the school board. That administration is the best, economically considered, which makes every dollar yield the best return. The question is where to save without detriment to efficiency. I found in the Denver system a remarkable example of efficiency and economy combined. This was the result, of course, of the superior ability and public spirited devotion of the school board and superintendent.

In the current criticisms of our city school systems, the hackneyed complaint is that the school money is lavished on showy school architecture. This complaint is, for the most part, groundless; but it is a fact worthy the attention of authorities charged with the responsibility of school-house building that the cost of school-houses in different cities is not at all proportioned to their capacity and general excellence. I have been astonished to find school-houses in one city, school-houses costing \$10,000 or \$12,000, apparently as good as those costing \$30,000 or \$40,000 in another.

Cities might be named where great stress is laid on economical management in giving out dippers, brooms, and mats, while immense waste is all the while going on with the teaching force of the teachers and the

learning capability of the pupils, for the want of a wise and efficient direction.

In carrying on a system of schools, by far the largest item of cost in money is that of tuition. The rate of tuition is determined, of course, by the number of teachers and the rate of their salaries. With high salaries and a liberal supply of teachers, or, what amounts to the same thing, a small number of pupils to a teacher, the cost of tuition per capita must, of course, be large. On the other hand, by paying the teachers a minimum salary and assigning them a maximum number of pupils to teach, of course, we have as a result the minimum cost of tuition per capita, and with it, inevitably, a minimum result. As a rule, each school board has assigned to it yearly a certain fixed amount of money for the ordinary school expenses. This being the case, by far the most important economic question for the board to decide is that relating to the adjustment of the rate of salaries and the number of pupils to a teacher. A maximum number of pupils to a teacher will afford a maximum salary, while a minimum number of pupils to a teacher affords the minimum salary. It is evident that both these extremes should be avoided. In this matter, the middle ground is the wise one. Now, what is the middle ground in respect to the number of pupils to a teacher? Experience must determine. If as many as seventy-five or a hundred pupils are given to a teacher, every school man knows that the result must be insufficient instruction. On the other hand, there are enthusiastic reformers who insist that the number of pupils to a teacher in the public schools should be as low as thirty in order to produce the desired result. But it is evident that the employment of teachers sufficient in number for this plan, at living salaries, would involve an expenditure beyond the means available in the present state of society. A fair medium number of pupils to a teacher in a well graded system of the primary and grammar grades lies somewhere between the limits of fifty and sixty. Fifty-six may be considered as a reasonable standard register number for the primary grade, sixty and fifty being the maximum and minimum limits respectively. The grammar grade, especially in the upper classes, might be allowed a little lower standard. With good school rooms and furnishings, an average of fifty-four on the register of the primary and grammar grades taken together would, perhaps, come nearest to meeting the requirements both of economy and efficiency. An average register of fifty-four ought to give an average attendance of about fifty. This number can be efficiently handled by the average teacher in one class in such branches as writing, drawing, spelling, object lessons, singing, and perhaps reading. In some other branches, such as arithmetic, grammar, geography, &c., where it may be expedient to divide the class into two sections, twenty-five is not too large a number for class instruction by the average teacher.

As the number to a teacher rises above the standards here assumed, the efficiency of instruction must rapidly diminish. As it falls below,

the expense rapidly increases; but experience proves that the value of the results does not increase in the same ratio. I imagine that superintendents are not accustomed to find in classes of forty pupils to a teacher any appreciable superiority over classes containing fifty pupils to a teacher. It has been held by some educational officials that in the lowest primary classes a much smaller number of pupils should be assigned to a teacher than in the higher grades; but this view is not sustained by the soundest pedagogical authority. The higher the grade the smaller the number of pupils to a teacher. This is a sound principle, and there is no good reason why it should not be applied to the lowest primary classes as well as to other grades.

In our country little or nothing has been done by statutory provision to limit the number of pupils that may be assigned to a teacher, while in the foreign countries prominent in education the maximum number of pupils to a teacher is prescribed by law. With us this is a matter within the control of the school boards.

Taking New York in illustration of the phase of economy under consideration we find regulations of the board as to the number of pupils to a teacher, as follows:

- (1) No class in the grammar school shall contain more than sixty pupils.
- (2) No class in the primary school shall contain more than seventy-five pupils.
- (3) No teacher shall be appointed by the board of trustees in any ward unless the average attendance of pupils shall be equal to at least thirty-five to each teacher in a grammar school and at least fifty to each teacher in a primary school (exclusive of the principals and teachers of special subjects).

By comparing these regulations one cannot but be struck by the very wide range between the maximum and minimum limits, this range being twenty-five both in the grammar and primary schools. If the board of trustees in one ward should carry on the grammar schools with the maximum number of pupils permitted to a teacher and the trustees in another with the minimum number, the cost per capita for tuition in the former would be about 58 per cent. of the cost in the latter. Again, if the trustees of a ward should require the primary schools to keep up the maximum number to a teacher, while running the grammar schools with the minimum number, the cost per capita in the former would be only about 46 per cent. of the cost in the latter, this calculation being based on the assumption that the ratio of the cost for salaries of principals is the same in both grades. The principle on which the discrimination between the grades is made is no doubt correct; but the difference seems to be quite too much in favor of the grammar grade. A glance at the existing facts as to the number of pupils to a teacher in the New York system will make the matter still clearer. For convenience, only round numbers are used. The cost per pupil for 1882 in the grammar schools was \$32 and the number of pupils to a teacher was about 33, the salaries averaging nearly \$1,000 to a teacher. Now, if the number of pupils to a teacher had been 50, the salary to a teacher

might have been \$1,500 without any increase in the aggregate cost; and, on the other hand, if the attendance had been 50 pupils to a teacher, there might have been a reduction of about 33 per cent. in the expenditure for salaries. In the primary schools, the average daily attendance to a teacher was 45 and the average rate of salaries was about \$650. If the attendance had been 54 to a teacher, the salaries might have been raised to about \$800 without any increase of expense, and, on the other hand, the rate of salary remaining unchanged, there would have been a reduction of about 17 per cent. in the cost of tuition per capita.

For comparison, reference is made to the provisions and statistics of some other cities bearing on this point:

Chicago.—The average number of pupils to a teacher in daily attendance in the elementary day schools, report of 1883, is 47.7; average number of pupils (belonging) to each teacher, not including principals and special teachers, 54.

San Francisco.—"A full class in the fifth, sixth, or seventh and eighth grades shall consist of sixty registered pupils." "A full class in each of the grammar grades shall consist of 54 registered pupils, provided that number can be comfortably seated in the school room." In the elementary day schools, that is, primary and grammar, the average daily attendance to a teacher is 41.

Dayton.—The average daily attendance per teacher in the elementary day schools is 36.

Kansas City.—The average daily attendance per teacher in the elementary day schools is 54.

Cleveland.—The average daily attendance per teacher in the elementary day schools is 43.

TENURE OF OFFICE OF TEACHERS.

At the first annual meeting of the Massachusetts State board of education, in 1838, the memorandum of the business to be transacted comprised the election of secretary. When this item was reached, the honorable secretary, Horace Mann, remarked in substance that, as a matter of course, his presence would not be proper during the deliberation of the board on that matter and retired to await his recall to hear the result of the ballot. At every annual meeting of the board from that time to this the election of secretary has been one of the items of business and a similar proceeding has taken place. Such was the tenure of office of the most eminent of American educational officials, and such has continued to be the tenure of office of his successors. If such is the tenure of office of the chief educational official of such a Commonwealth, it is not strange that the public school teachers generally should be no better off in this respect. Accordingly, we find that the teachers in our city schools are almost universally subject to the ordeal of an annual election. The teachers are considered as having no property or interest whatever in their position. They are not only liable to

removal at the end of each year by a failure to be reëlected, but they are liable to summary dismissal at any time by the action of the local boards, without notice, without the right of a hearing, and without the right of appeal to a superior authority; and such dismissal is final and absolute. The cities affording an exception to this precarious tenure are few. Among these exceptions there are two very important ones, namely, New York and Brooklyn. This precariousness of tenure is a peculiarly American feature of public instruction. It exists in no other civilized country; and with us it is not known in universities, colleges, and other higher institutions of instruction outside of the public school system. It is quite certain that in adopting the precarious tenure we have not struck out a new and better path in which other countries are to follow; on the contrary, in this respect we are behind and not in the lead. The goal for which we are all confessedly striving is the most economical and efficient system of instruction; and the history of education proves that the best results in instruction are produced only where teaching is pursued as a career for life; and, second, it teaches also that permanency of tenure is essential as a means of rendering teaching a desirable career. The plan of appointing teachers for a short, determinate period is coeval with the modern organization and development of our common school system. It has been tried on a large scale for a long period of time. During this period we have made comparatively little progress in securing a permanent teaching corps. The failure of our system of instruction to secure the services of a body of teachers devoted for life to the work was set forth in the remarkable Report on American Education by the French Commission, of which the eminent educator, M. Buisson, was the president, and contrasted with the success, in this respect, of the French system. In France, says the reporter¹—

One embraces the career of teaching with the intention of creating for himself a stable and permanent position. Those who abandon it before having obtained their retiring pension form the exception. The young beginner expects to live and die a teacher; and, each year of exercise adding to the experience previously acquired, a moment arrives when, possessing a competency of knowledge, both theoretical and practical, he can conduct his school with method, with success, and thus limit the role of his superiors to simple encouragement or kindly advice. In the United States it is otherwise. The profession of teacher would appear to be a sort of stage, where the girl waits for an establishment suited to her taste and the young man a more lucrative position. For many young persons this temporary profession is the means of procuring the funds for continuing their studies. Few masters count more than four or five years of service, and, if instructresses remain longer in the profession, it must be remembered that marriage is ordinarily the end of their desires; and once married they almost always withdraw from the service.

If this is the correct statement of the case (and that it is I think will be generally agreed), then our system has failed to create a stable, per-

¹M. B. Berger, inspector general and director of the Pedagogical Museum and Central Library of France.

manent profession of teaching, while such a profession has been created, not only by the French system, but by the systems of all other enlightened countries except our own. My inference is that the failure of our system in this vital particular is owing to the short and precarious tenure of office of the teacher. No argument is needed to prove that, other things being equal, teaching as a career, as a life work, yields vastly better results than teaching as a temporary occupation.

The theory of permanent tenure is as follows: Permanency of tenure would enormously increase the desirableness of the teacher's status; while it costs nothing to the public to grant this permanency, to the teacher it would be an inestimable boon; as a means of compensating teachers, it would be equivalent to a vast increase of school revenue; and the salary, even though raised to the highest practicable limit, when subject to the effect of short and precarious tenure, with all its train of evils, is insufficient to bring into the service of teaching and retain there the requisite talent. In substance, then, the question of permanent tenure of teachers is, in the first place, a question of economy, the question of conservation of forces; that is, the question whether the money compensation of teachers shall be, in effect, supplemented by what costs nothing. In the second place, it is a question of educational results, for salary plus permanent tenure is the indispensable condition of the ideal teaching corps, and hence the indispensable condition of the ideal school and the ideal education.

The reasoning on which this theory is based is extremely simple and is the following: (1) Permanency of situation everywhere and always counts largely with the salary in estimating the emolument of the situation, and it is self evident that these two elements together are greater than one of them alone; (2) the addition of permanency of tenure to salary is necessary to make teaching a career sufficiently attractive for persons of ability and culture as a life work; and it is only from such persons, devoted to teaching as a life work, that the best teaching can come.

This reasoning is the plain lesson of history, which he who runs may read. It is well known that the German states, and more especially Prussia, took the lead in the organization and development of the modern system of public instruction. And it appears that in Prussia, from the outset, the life tenure of office for the teachers was adopted as the first principle of the incipient system; and, in fact, the Prussians long ago expressly prohibited the appointment of any regular teacher for a determinate period. This was the original stalk upon which improvements were from time to time grafted, until at length its present vigor, completeness, and symmetry of development have been produced. Forty years ago Horace Mann thus characterized the teachers produced by this system: "As a body of men, their character is more enviable than that of any of the three so-called 'professions.'" In all the other European countries the point of departure and the process of develop-

ment have been substantially the same. It is safe, I think, to say that in no one of them has it been thought expedient to attempt to carry on a system of schools on the plan of choosing teachers for a short, determinate period.

On the other hand, it seems to have everywhere been taken for granted that there could be no such thing as an efficient and economical school system without making provision for securing the services of teachers who should be devoted to the business of instruction as a life profession. Accordingly we find that although public school teachers have, perhaps, nowhere received entirely satisfactory treatment, they have generally been secure in their position and in their revenues, all too slender though they may have been. Thus the beginning was made by laying a foundation for a status of dignity and independence. This was all important as the initial provision. The rest followed logically, although not without delays and difficulties. Since it is the teacher that gives character to the school, as no well informed person will deny, we find that most of the measures of progress and improvement have been such as were calculated to ameliorate the condition and elevate the status of the teacher, to provide better professional training, to improve the scheme of examination and certificating of candidates, to increase the compensation, to secure a more competent and trustworthy superintendence and inspection, to afford the best means of appreciating and rewarding merit. These were the objects always uppermost in the aims and efforts of intelligent promoters of educational progress. And thus by degrees have been secured the conditions requisite to render teaching a veritable career; not a career, indeed, leading to wealth and luxury, but a career of assured independence, dignity, and support.

In our country the point of departure and the process of development have been quite different from those we have considered. We have undertaken to develop and build up an efficient system of instruction while acting on the assumption that the teacher cannot be recognized as having a claim to any ownership in a position of service.

In our system, therefore, there has been provided as yet no solid foundation upon which to build up a desirable status for the teacher; consequently little has been done to environ the teacher's office with the subsidiary guarantees requisite to constitute a career of teaching service. This condition of absolute insecurity and dependence in respect to position is necessarily compensated, in some degree, by the rate of salary. In fact, our system, instead of taking permanency of tenure as the point of departure from which to develop a competent teaching corps, in accordance with the opinion and practice prevailing in all other enlightened countries, has relied primarily and mainly upon compensation in money as the mainspring in the scheme for securing the desired teaching service.

I cannot help thinking that this uncertainty of tenure, this absolute dependence of teachers, both in respect to livelihood and reputation, upon

the will of local committees, is the most serious defect in our school system. Reform in this particular is most urgently demanded; not that, as a matter of fact, teachers are displaced by wholesale when the annual election comes round, but because they are all liable to displacement by this process. The actual summary dismissals without just cause are not numerous, but even in the best managed city systems they occur with sufficient frequency to inspire too many of the teachers who are spared with a sense of humiliation and insecurity.

But the effect produced on the minds of the mass of teachers by unjustifiable removals through the machinery of the annual election—our barbarous school guillotine—is, perhaps, less pernicious and regrettable than the effect resulting from what is sometimes called the “blackballing” process. A teacher is said to be “blackballed” when he has failed to receive a full vote at the election. It is no uncommon thing for the best of masters to be elected by a small vote, for which no possible reason could be assigned except that they had some individual opinions with regard to educational matters. What could be more disheartening to a corps of teachers than such unjust treatment? Capable men hasten to quit a situation which exposes them to such humiliation. To render the permanent tenure effectual, it must be accompanied by a permanent, that is, an irreducible salary, as control of salary is virtually control of tenure.

We know what the objector to this plan will say: Your permanent tenure, with its irreducible salary, constitutes without doubt a desirable status for the teacher, providing the rate of salary is not too low. Whatever other tribulation may await the teacher, he has no longer any risks to run; he has no longer to submit to an annual humiliation in the shape of an annual election; his reputation and his living are no longer at the mercy of incompetent or prejudiced school officers; his status is invested with dignity and independence; he can hold up his head like a man and look the whole world in the face. But in all this what have you done but shift the risk from the employé to employer, from the teacher to the public? You have insured the teacher against risk, but what guarantee has the public that the teacher will do his duty when he has no longer the fear of losing his situation to act as a spur to effort? Are not the annual election and the power of summary dismissal necessary means of stimulating teachers to vigorous and sustained effort and of removing those who are delinquent and incompetent; and, besides, is not this permanency of tenure contrary to the spirit of our free institutions and too un-American to find favor with us?

To these questions, which embody the substance of all that can be said in favor of annual election and the power of summary dismissal, it may be said in reply: First, that the precarious tenure has not been found necessary for the end in view in any other enlightened country on the globe; and, second, in our own country the annual election is unknown outside of the public school system, so that this odious annual

election has no place in the civilized world except in the public schools of the United States. But it is not denied that the public should be guaranteed against risk as well as the teacher. In the adjustment of compensation and service the relation of risks must always be taken into account. In this case the guarantee of the public against risk is perfectly feasible, as experience has satisfactorily proved.

This guarantee consists of six distinct provisions:

(1) A thorough professional training of teachers in normal schools, suited to their destined functions. This is necessary as the primary guarantee against the appointment of teachers without the requisite qualifications. And it is evident that the State could afford a more liberal expenditure for the education of a teacher who is to serve the public thirty or forty years than for the teacher who is to serve only three or four years. Only a small fraction of the teachers now engaged in the service are graduates of normal schools, there being no one State that has not recoiled before the task of securing to the whole body of teachers a professional education; and this is because of the very great number of teachers which teaching as a temporary employment necessitates.

(2) Another guarantee should be provided by a system of examining and certificating teachers by experts wholly under the control of the central authorities; besides, the local certificate, the only one, with few exceptions now issued, does little for the establishment of the standing and reputation of the holder. But a certificate granted by the central authority, and valid throughout the State, would create a professional rank and standing which would elevate the status of the holders.

(3) As a third condition requisite to the permanent tenure, probationary service must be provided for. The candidate must not only have his certificate, but he must prove his capacity by actual service in teaching before he can claim a definitive appointment. The period of probation should not be less than two years and it might well be three or four. The judgment on the result should be rendered by one or more approved experts. If a further guarantee against failure is deemed expedient, it may be obtained by an examination at the end of probation, bearing especially on the practical work of the school room.

(4) As to the choice to be made among candidates thus prepared, the most judicious method appears to be for the superior school authority to nominate three or four candidates, having regard both to seniority and merit, and that the selection from this list should be left to the local committee.

(5) Provision for a suitable hierarchical situation for the teacher. Such a situation would comprise a competent supervision and the other means requisite for stimulating the teacher to the best efforts, by recognizing his worth and rewarding his merits; and such a situation would also comprise the necessary machinery for administering just and

salutary discipline in cases of delinquency. In France the hierarchical situation is so well contrived that the young man of talent, entering upon his career as primary teacher in the remotest mountain hamlet, may hope to reach, by well earned promotions, the principalship of a metropolitan school or to become director of a normal school or even inspector.

"It is the function of a good administration," says the eminent Belgian publicist and educator, Émile de Laveleye, "to seek by fixed rules, which science indicates, to ascertain merit and to class individuals according to their aptitudes; then there would be an end of solicitations, of subserviency, of intrigues, of protections, of favors, of injustices." And this is the paradise for which the teacher prays. He wants to feel that he owes his position to his merit, and not to favor, and to be sure that his efforts will be appreciated and recompensed. It is, perhaps, in vain to hope that the public school teacher's pathway may be strewn with roses; hitherto it has been too much hedged up with briars and thorns: but the supreme misery of his lot is to be judged by incompetents. This would necessarily be mitigated by the better supervision which the permanent tenure would require.

(6) A retiring pension is requisite, not only as a security for old age, but as a means of rendering practicable the retirement of the aged and fatigued public servant without reflecting on his reputation or abandoning him to destitution.

These six conditions are logically involved in the full and complete application of the principle of fixity of tenure. Moreover, they are at the same time the means of producing an equilibrium of risks and authorities which experience has proved to be indispensable to the most efficient, economical, and harmonious working of a school system.

In every point of view this reform in our system seems to me fundamental in its importance; all others are but secondary, subordinate, accessory. It may seem to the timid to be a bold undertaking, but it is not more bold in the present circumstances than the project of State normal schools or the project of a State board of education fifty years ago. Every epoch has its peculiar tasks. This reform I verily believe to be the task of the hour for the friends of educational progress. Public sentiment is now everywhere drifting in this direction. In the powerful movement which has been begun to reform the civil service I see plainly the dawning of a new and better day for the public school and the public school teacher. The press is daily teeming with arguments for this cause, for the principles of a good civil service are essentially the same as the principles of a good educational service. Hence the achievement of the civil service reform will prepare the way for this reform. The spoils system and the annual election are twin barbarisms, and with the abolition of the former the latter must go.

But permanent tenure is not to be brought into successful operation by a single legislative act. This radical reform must be reached by a

series of steps. Initiatory steps have already been taken in various quarters. It is worthy of mention that, at a late session of the Massachusetts legislature (1874), the chairman of the committee on public service offered to include the teaching service in the provision of the civil service reform bill reported by this committee.¹ This reform must begin practically in the cities and larger towns. Teachers have their duty in connection with this task. Everywhere they should pour in their petitions and memorials upon the legislatures, throughout the country, and do their share of the work in creating public opinion which shall demand this reform.

To our metropolitan city belongs the credit of taking the lead, and of setting a good example to cities of less importance, in respect to the reform in the tenure of office of teachers. In New York the position of the public school teachers is reasonably secure. This security is provided for in the law creating a department of public instruction for the city and county of New York. In the first place, teachers are elected once for all, presumably to serve during efficiency and good behavior. There is no recurrence of election whatever. The barbarism of annual election is utterly unknown in the system. There are three modes of removing teachers: (1) By the board of education, upon recommendation for cause by the city superintendent, or a majority of the trustees for the ward, or a majority of inspectors for the district; but not without a three-quarters vote. (2) The board of trustees for the ward, by the vote of a majority of the whole number of trustees in office, may remove teachers, other than principals and vice principals, provided the removal is approved in writing by a majority of the inspectors of the district; but the teacher so removed has the right of appeal to the board of education, and may be reinstated if the board so decides. (3) By revocation of license by the city superintendent, for cause affecting morality or competency, and the written concurrence of two of the inspectors of the district in which the teacher is employed, the teacher having the right of appeal to the State superintendent and the revocation taking effect only after the confirmation of the State superintendent. In short, the principle of fixity of tenure is fully recognized in the New York system. There is no such thing as summary dismissal or arbitrary removal. The teacher once appointed is not subject to removal except for cause touching his morality or competence, upon charge of responsible officers and sustained by competent evidence. And thus the fundamental requisite for a good status for the teacher has been provided.

On the other hand, in the Boston school system, the oldest in the country and that which has been most commonly ranked with New York as a representative system, the teachers hold their position by a tenure as insecure as it can well be made. In the infancy of the system

¹At the present session of the Massachusetts legislature, January, 1885, a bill has been introduced providing for a more permanent tenure of office for teachers.

the famous Master Cheever was inducted into the office of principal of the Latin School with much pomp and ceremony. He had come to stay; and he did stay until "time took him off," after he had got well into the nineties. He had probably never heard of the absurdity of electing schoolmasters annually; but in an evil day some shortsighted reformer introduced this bungling contrivance of getting rid of incompetent teachers, and, as time has gone on, the condition of teachers in respect to security of position has grown worse instead of better. There is nowhere, either in statutory provision or in the by-laws and regulations ordained by the school board, any recognition of the principle that the teacher has any right to continuance in the service, no matter how unexceptional in conduct or capability. Every principal is liable to be dropped from the service at the end of the year unless he obtains the votes of a majority of the whole number of members of the board, this majority being the legal quorum. Hence, the loss of a single vote would cost the master his place, if there happened to be only a quorum present at the time of voting. The case of the subordinate teachers is still worse. Unless nominated to the board by the majority of their district committees, their reelection is not even considered by the board. In fact, no teacher is accorded the right of being notified of any intention to drop him from the service, and, when dropped, has no redress, not even the poor satisfaction of being informed for what cause he has been deprived of his means of livelihood.

This precariousness of tenure has been aggravated and rendered less endurable by the system of supervision inaugurated by the supervisors, described in another part of this report.

Reform of this feature of the system, which has been so discouraging and demoralizing to the teachers, has of late been considerably agitated, and it is to be hoped that the time is not distant when not only in the Boston system, but throughout our city systems generally, teachers will be made secure in their situations during efficiency and good behavior.

The cities of Brooklyn, Jersey City, and Newark are reported as having taken the advanced position, by the side of New York, in reforming the tenure of office of teachers. The superintendent of Jersey City, Mr. George H. Barton, writes as follows:

Teachers once appointed in this city hold office during the will of the board or during good behavior. One or two principals have held their positions for thirty years. Teachers can only be removed for cause after a fair trial.

Superintendent William N. Barringer, of Newark, says:

Our teachers are all appointed during good behavior and cannot be dismissed except for good cause. We settle them for life.

EXAMINING AND CERTIFICATING OF TEACHERS.

The object in view in the examination of teachers is to exclude the incompetent from the teaching service, leaving the door open only to

teachers who are capable and devoted to their chosen calling. It is of the utmost importance for the encouragement and improvement of the profession of teaching that every practicable means should be employed to secure to capacity and merit their just recognition and reward, and that provision should be made for the fairest competition between candidates for responsible and lucrative positions. This is what a good system of examinations is designed to accomplish.

With some exceptions, the school board of each city is responsible for the character of the examination which tests the qualifications of the teachers whom it appoints. Hence in these examinations there is no such thing as uniformity, either with respect to standard or method. While the certificate of qualification granted by one school board may be well-nigh worthless as evidence of fitness and capacity, the certificate given by another board in the same State and neighborhood may be safely taken as reliable evidence of the holder's competence.

In a few States provision exists for State certificates of qualification of different grades, awarded by a State board of examiners. The State certificates in such States are valid in the cities thereof. It is a curious fact that the lead was taken, in providing good systems of examining and certificating teachers, in some of the newer States, and notably in California. In the State just mentioned a good system was provided nearly twenty years ago, through the agency of the very able State superintendent,¹ both for country and city schools, while at the same time, in the State where the common school system had its origin, it could not be said that there was any such thing as a good system of examining teachers, either for city or rural schools, the statute on the subject simply prescribing that teachers must be examined by a local committee in order to be entitled to payment for service. In every city in the State of California, having a board of education governed by special laws, it was provided that there should be a board for determining the qualifications of teachers, to consist of the city superintendent, the president of the board of education, the county superintendent of the county in which the city is situated, and three public school teachers, residents of such city, who are elected by the board of education for one year. This board was empowered to grant the following grades of certificates, namely: (1) "Educational diplomas," valid for six years; (2) certificates of the first grade, valid for four years; (3) certificates of the second grade, valid for two years; and (4) certificates of the third grade, valid for one year. These certificates were valid only in the city in which they were granted.

At the present time the State of Ohio stands among the most advanced States, if not, indeed, as the foremost, in respect to statutory provisions for examining and certificating teachers. In this State the law provides for State, county, and city boards of examiners and pre-

¹ Hon. John Swett, the actual principal of the City Normal School, San Francisco.

scribes their duties and powers in detail. The legal provision for boards of examiners of teachers in the cities of the State of Ohio is as follows:

There shall be a board of examiners for each city district of the first class, to be appointed by the board of education of the district [city]. Such board may consist of either three, six, or nine persons, as the board of education may determine, and the persons appointed shall be competent for the position and residents of the district for which they are appointed. The term of office of such examiners shall be three years.

The board shall organize by choosing from its members a president and a clerk, and, to secure a thorough examination of applicants in difficult branches or special studies, the board may secure the assistance, temporarily, of persons of sufficient knowledge in such branches or studies. The board may grant certificates for one, two, three, five, and ten years, which shall be signed by the president and attested by the clerk and shall be valid within the district wherein they were issued; and such certificates issued for five and ten years, if in part on account of consecutive years of teaching and experience, shall be renewable, without reëxamination, at the discretion of the examining board. Certificates so granted may be revoked for cause by the board of education.

Under the provision of this law the actual board of examiners of the city of Cincinnati consists of nine members, of which the superintendent of schools is a member and the president. Quite contrary to the spirit of the California school law, which provides that the city board of examiners shall comprise three teachers, by a seemingly preposterous rule of the Cincinnati school board, no teacher, either public or private, can be an examiner. The board holds examinations on the second Thursday of June, October, December, February, and April of each year, continuing them until finished.

The board grants five grades of certificates, denominated, respectively, male high school certificates, female high school certificates, principal's certificates, assistant's certificates, and special certificates to teachers of the special branches—foreign languages, music, drawing, penmanship, and book-keeping—which last shall require an examination also in the branches required by law.

Considering that the Cincinnati system of examining and certifying teachers is so exceptionally elaborate and complete, I deem it desirable to introduce here, for the sake of comparison, the following rules and regulations of the board of examiners:

Subjects.—(1) Theory and practice of teaching; (2) spelling and definitions; (3) reading; (4) grammar; (5) penmanship; (6) mental arithmetic; (7) written arithmetic; (8) geography; (9) American history; (10) ancient and modern history; (11) natural philosophy; (12) elements of anatomy and physiology; (13) English or German literature; (14) music or drawing; (15) chemistry; (16) algebra; (17) geometry; (18) astronomy; (19) Constitution of the United States; (20) comparative anatomy.

Candidates for a male high school certificate are examined in the first nineteen of the above subjects and such other branches as they may be required to teach. Principals of high schools will also be examined in the last branch above named.

Candidates for a female high school certificate are examined in the first sixteen of the above subjects and such other branches as they may be required to teach.

Candidates for a principal's certificate are examined in the first nineteen of the above subjects.

Candidates for an assistant's certificate are examined in the first fourteen of the above subjects.

Candidates for German certificates, who have been educated in the public schools of Cincinnati, shall be required to pass examinations in mental arithmetic, written arithmetic, and geography, before the English examiners.

Special teachers are examined in the branches which they propose to teach, in which they must have at least nine, ten being the maximum, and in the theory and practice of teaching in the English language, unless the board shall otherwise direct.

The number opposite to each branch in the column on the right of the list of the studies on the certificates issued measures the result of the examination, ten being the maximum. Less than seven in either German, grammar, geography, written arithmetic, mental arithmetic, or spelling is a failure. Certificates are valued as follows: For an average of 70 per cent. of correct answers, two years; 80 per cent., five years; 90 per cent., ten years. No person, however, shall receive a certificate for ten years who has not had two years' experience in teaching graded schools. The first certificate granted shall in no case be for a longer term than two years.

No certificate shall be issued without an average of 70 per cent. of the full number of marks.

The board will grant no certificate to any candidate who entirely fails in any branch of study in which an examination is required.

A record of the character of the examination of each individual is preserved in a book kept in the office of the board of education.

Candidates who have not taught in the public schools of Cincinnati must leave with the clerk of the board, at least three days before the regular meeting, a certificate of good moral character, together with legal fee, fifty cents, and a declaration that they are eighteen years of age (or seventeen, if graduates from the high schools or with similar attainments) and that they design to teach in the public schools of Cincinnati, if found qualified. Candidates are requested to leave their address and a statement of any experience they may have had in teaching.

Candidates for high school certificates are required to file their applications with the clerk of this board at least one month before the time of examination, in which application all the branches which they may be required to teach must be named, and the certificate granted shall be valid for those branches only in which the candidate has received at least eight.

All candidates for high school certificates must be examined in all the subjects required for such certificate, except as provided in Rule 14 of the school board.

Candidates shall be examined in the absence of all spectators, save the members of the board of education.

Examinations shall be held only at the time designated in section 2. Candidates shall not be examined who are not present punctually at the appointed hour. No candidate who has failed in more than one branch shall be admitted to a second examination till after the expiration of six months. A candidate who has failed in one branch only shall not be reexamined within six months, unless such candidate has an average of eight in other branches. Such candidate must pay the legal fee and be reexamined in all branches in which the previous mark was less than eight.

Reexamination.—Any candidate for reexamination who may be employed in the city schools shall file with the clerk of the board an application for such reexamination, accompanied by the previous certificate, at the regular meeting, four months preceding that at which the candidate proposes to be examined. Principals desiring to be examined shall give six months' notice. All candidates for reexamination for the high schools, of five years' experience, who shall present high testimonials of

merit and success shall be examined in those branches only which they are expected to teach.

The district, intermediate, and high schools shall be divided into districts, and a committee of two members of this board appointed for each district, whose duty it shall be to visit the schools in their respective divisions for the purpose of examining and reporting upon the management and method of instruction of the candidates for reëxamination. From the certificate last granted by the board and the report of the visiting committee, the board shall determine the character of the reëxamination to be required of each applicant, and the candidate shall be notified thereof two months previous to the time of such examination: *Provided*, That candidates shall be required to undergo an examination in all those branches in which they are marked less than seven. A teacher whose certificate has expired, and who has not been engaged in teaching in the public schools of Cincinnati within two years next preceeding the date of his or her application, must be examined in all the branches required by the rules.

The grade of certificate shall be determined by the average of the candidate in all branches required, including theory and practice of teaching: *Provided*, That no candidate shall receive a certificate for ten years who shall fall below nine in "theory and practice;" nor for five years, if the candidate fall below eight in the same subject: *And provided further*, That no certificate shall issue to a candidate falling below seven in "theory and practice."

No candidate shall receive a two-year certificate more than twice.

All German teachers who have been employed in our schools for three years or more shall be examined in English grammar, reading, spelling, and definitions.

Any teacher who shall engage in teaching any branch of instruction in which he or she has not been examined, and after having received three months' notice shall persist in so doing, shall be deemed guilty of improper conduct and shall be dismissed by this board.

Any proposed change in the foregoing rules shall be presented in writing and shall lie over until the next regular meeting, and every member shall be notified of the proposed change within one week after its presentation. A vote of two-thirds of the members present shall be necessary to change any rule of the board.

This system has without doubt many merits and it is well worth the study of the school officers of other cities. But there seems to be no good reason why certificates of the first and second class, requiring high percentages of correct answers, should be valid only for a limited period when the holders thereof are in continuous service. Again, a fixed rule as to the percentages requisite for a certificate would seem to be of doubtful expediency, as it is impossible to provide by a regulation for a uniformity in the character of the papers set.

Among the cities of the first class, Boston has been conspicuous for its lack of a good system for examining candidates for teachers.

Eight years ago this function was committed to the board of supervisors. The plan adopted by this board comprised a very wide range of topics; and failure to obtain a high percentage in any of these by a candidate deprived him of a certificate. Even the candidates for the certificate requisite for the head mastership of a high school were required to be examined in the details of a wide range of subjects which the most scholarly teachers seldom retain in memory long after passing through the school and college. The consequence was that teachers of high standing, which had been reached by years of successful experience, precisely the description of candidates wanted, and those that

were anxious for a fair chance to show their fitness for the lucrative positions to be filled, did not present themselves for examination. They could not afford to run such risks of a failure to obtain a certificate. Hence the candidates were mostly persons fresh from the school or college, or unsuccessful adventurers who were glad of a chance to run for luck. As might have been expected, the lists of certificated candidates seldom bore the names of teachers such as were wanted for the more important places, and never those deemed competent for the highest posts.

After the inauguration of this system, a head master of a high school being wanted, extensive search was made for a suitable candidate. A man of high reputation and undoubted scholarship was found. The place suited him; the salary was \$4,000; but he had not the certificate of qualification which the regulations required and he refused absolutely to take the examination for it, frankly owning that he could not pass it. So the school board ordered the supervisors to grant the certificate on the strength of the curriculum vitæ and testimonials of the candidate, after a makebelieve oral examination.

Of the many similar cases which might be cited in illustration of the unhappy operation of this injudicious system, one more must suffice.

In an examination of candidates for the principalship of evening elementary schools, a position which required no teaching whatever and the supervision of the teaching of nothing beyond the three R's, there happened to be a candidate who had fitted for college in a school of the first order, had graduated at Harvard with high rank, and had passed through a three-year course at a German university, gaining the degree of doctor of laws. This gentleman was deemed to have failed to come up to the required standard of scholarship because he failed to solve satisfactorily some of the problems in the algebra paper.

Since that time the plan of examination has been somewhat modified in the right direction, though in its essentials it remains the same. In the mean time, as a partial remedy for its defects, the school board has made the following rather cumbersome provision:

If a vacancy exist in a subordinate position in any school and it is desirable, in the opinion of the committee in charge, to procure the services of some instructor who has not been examined as required, application shall be made to the committee on examinations, who, if they approve the purpose, may invite a member of the board and direct a supervisor or the principal to examine and inquire into the qualifications of the proposed candidate, and, if he is employed in teaching, to visit his school at the expense of the city. Upon a favorable report, in writing, approved by the committee on examinations, the board of supervisors shall especially examine the candidate,¹ who, if qualified, shall receive the usual certificate.

The regular examination is held only once a year and applicants are not admitted unless they have had one year's experience in teaching or have graduated from some normal school within the State. The grades of certificates are as follows:

¹ That is, the examination is to be adapted to the circumstances of the case.

First grade, to head masters, masters, and junior masters of the normal and high schools and principals of evening high schools; second grade, to masters and submasters of grammar schools, principals of evening elementary schools, and assistants of evening high schools; third grade, to assistant principals and assistants of normal and high schools; fourth grade, to assistants of grammar, primary, and evening elementary schools; special grade, to instructors in special studies and in schools for the deaf and licensed minors.

These certificates are, very properly, valid within the city for an indeterminate period.

In general, the examination of teachers is conducted by a standing committee of the school board, with the assistance and coöperation of the superintendent. In some important cities, this examining committee leaves the business of examining mainly to the superintendent. In New York and some other cities, the examining and certifying of teachers are almost exclusively in the hands of the superintendent.

Is it not possible that a scheme of examination well calculated to keep ignoramuses out of the teaching profession may not be equally well calculated to do justice to candidates of the highest order? In the existing scheme of examination in the system of the District of Columbia the device for solving this problem is worthy of notice. This device consists in providing that the examination and certificate for situations above the eighth grade shall be special, which means, it is presumed, that the examination is not to be conducted in conformity with the general rules relating to the matter, but shall be adapted to each individual case. The system of examination in the District of Columbia has some other features which are somewhat peculiar. This board of examiners, which consists of the two superintendents and such other members as may be appointed by the school board from the supervising principals and principals of schools, is divided into two sections, designated as *first* and *second*. The *first*, comprising the two superintendents and one other examiner, prepares the questions and superintends the examination, while the members of the second, who are not permitted to be present while the examination is going on, are charged with the duty of examining and marking the papers of the candidates. The results thus obtained are reported to the committee on teachers, while the oral examination is made and reported on by the first section. It is the duty of the committee on teachers to examine these results and to report to the school board the names of the candidates whom they deem worthy of certificates and the class of certificates to which they may be thought severally entitled, together with any other facts deemed necessary or that may be called for. And finally, the school board, with such information in their possession, determines what candidates may receive certificates and the class of such certificates. The candidates are known only by numbers till the question of certificate is decided.

Of this unique system of examination, the annual report for 1880 remarked as follows :

The most important act of the board of trustees since its organization, August 2, 1878, was the adoption of amendments to Articles IV and V of the by-laws. These amendments consisted of a series of provisions and safeguards thrown around the examinations of applicants for teacherships and promotions. They were prepared by Charles E. Hovey, esq., of the old board of trustees, and, in addition to providing a philosophical and uniform rule for examination of candidates, they secured impartiality on the part of the examiners, independence on the part of the trustees, and provided scholarship as a basis of admission as an instructor, leaving to time—the only test—to determine respecting the possession of those other essential qualifications whose possession or want trial alone can discern.

The amendments have been an impassable barrier to the entrance into the profession of teacher of many applicants who, together with their friends, regard public schools as an asylum for the maintenance of such as have more influence than means, more friends than abilities. * * *

The board can congratulate itself upon the possession of a method of examination which not only secures the strictest impartiality, but leaves no room for suspicion upon the part of the class of chronic fault finders that infest every school community.

It may readily be admitted that this plan is well calculated to guard against partiality, but it seems to make no provision for considering any evidence of competency other than the marking by the examiners of the results of the examination in the prescribed branches of study, such as successful experience in teaching, courses of education passed through, testimonials of scholarship received, &c.

The system of examination and certificating of teachers which has been in operation in the city of Denver for a number of years being peculiar in some of its features and being known to me to have worked very successfully, a description of it is here introduced.

It is made the duty of the committee on teachers, consisting of two members, to examine or cause to be examined all applicants for positions as teachers. It is made the duty of the superintendent to assist in conducting examinations of applicants for positions as teachers and to issue certificates as provided by law under the direction of the board. The examination is both oral and written and embraces reading, spelling, English grammar, physical and descriptive geography, arithmetic, elements of algebra, United States history, English literature, elements of vocal music, and methods and theory of teaching.

The certificates are not graded and they are granted for an indeterminate period.

On an appointed day all who wish to obtain a certificate to teach in our schools present themselves as a class. No preliminaries previous to this time are necessary. The following instructions are given to them :

“DIRECTIONS TO CANDIDATES.

“At the beginning of the examination an envelope, with a number written thereon, will be handed you. You will be known during the examination not by your name but by the number on your envelope.

"Write on a slip of paper your number, name in full, and present address; inclose the slip in a numbered envelope and seal the envelope.

"At the head of every sheet and separate half sheet of paper used at this examination write your number and the subject. Place before the answers the same figures that are before the questions."

Having taken this precaution to have the examination impersonal, questions on the branches required are submitted to the candidates and written answers obtained. These written papers are overlooked and ranked as is the custom in all written examinations. The average standing of the individual obtained from all the papers is recorded as the scholarship standing.

Each person (number) whose scholarship standing has been found satisfactory is asked to remain for a personal interview with the committee and such members of the board as can be present. This interview lasts from twenty to thirty minutes, during which time the candidate presents evidence of good moral character, and takes part in conversation relative to her history, experience, and success, and answers questions propounded by the superintendent on theory of teaching.

At the close of the interview, the candidate having withdrawn, each member of the board present rates the ability of the candidate on a scale of ten, each member stating in figures his estimate of the candidate's fitness for work in our schools. The average of this ranking by members of the board is the candidate's standing in oral examination.

The average of the scholarship standing and of the oral examination standing is the final rank of the candidate. When each member of the class has passed a like examination, the individual standing of each is set opposite the appropriate number and the board elect what numbers shall receive certificates to teach in our schools. Then the sealed envelopes are opened and the names of the candidates learned. From those holding certificates, teachers are elected in the order of their rank at examination.¹

This system, it will be seen, is like that of the District of Columbia in reserving the awarding of certificates in the hands of the school board, while it differs from it widely in making much of evidence of qualification other than that of scholarship ascertained by the examination, and it affords a good safeguard against favoritism in the appointments. It is also in effect a competitive examination for appointment as well as a general examination for a certificate.

A general survey of this element of our city systems leads to the conclusion that, on the whole, it is far from being all that could be desired. This subject deserves far more attention than it has received from our leading educators. It is obviously a delicate subject for the discussion of superintendents in their reports; and hence, if referred to by them at all, it is for the most part referred to in a perfunctory or timid manner. We have much to learn in this regard from those countries where civil service and educational service examinations have been far more scientifically treated than with us. The administrators of our city systems might study with profit the examination scheme of the civil service in England. In France, the examination of pupils and teachers, both general and competitive, has been reduced to almost an exact science. Our examinations for principals and teachers in high schools

¹ From report for 1883 by P. Gottesleben and Frank Church, committee on teachers.

are especially lame and inadequate. Examinations of teachers for certificates ought to be in the hands of the State authorities. Local boards or municipal boards might be allowed to institute competitive examinations of certificated teachers for appointment to particular situations, such examinations having reference rather to skill and capacity than to scholastic attainments.

PREPONDERANCE OF FEMALE TEACHERS.

One of the most notable characteristics of our school system is the overwhelming preponderance of female teachers. So great is this preponderance that it would probably be not far from the truth to say that the cities where male teachers are employed in elementary schools, in any other capacity than that of principals or as teachers of special subjects, such as German, for example, may be reckoned as the exceptions. In the high schools, the proportion of male teachers is much larger than in those of the elementary grades. In the mixed high schools, especially in the larger cities, the number of male teachers is, perhaps, nearly equal to that of the female teachers. Where the high schools are un-mixed, those for boys are taught by male teachers, while the schools for girls are taught mostly by female teachers, under the direction of a male principal. The following tables exhibit the proportion of male to female teachers in twenty-four representative cities:

Table showing the proportion of male to female teachers in ten cities of the first class.

Name.	Number of teachers.	Number of male teachers.	Number of female teachers.	Percentage of male teachers.	Ratio of males to females.
Baltimore.....	855	83	772	10	1 to 9.3
Boston.....	1,118	122	996	11	1 to 8.2
Brooklyn.....	1,355	64	1,291	5	1 to 20.2
Chicago.....	1,107	45	1,062	4	1 to 23.6
Cincinnati.....	659	128	531	19	1 to 4.1
New Orleans.....	402	23	379	6	1 to 16.5
New York.....	3,351	452	2,899	13	1 to 6.4
Philadelphia.....	2,168	82	2,086	4	1 to 25.4
San Francisco.....	687	63	624	9	1 to 9.9
St. Louis.....	1,017	117	900	12	1 to 7.7
Total.....	12,719	1,179	11,540	9	1 to 9.9

Table showing the proportion of male to female teachers in fourteen representative cities.

Name.	Whole number of teachers.	Number of male teachers.	Number of female teachers.	Percentage of male teachers.	Ratio of males to females.
Columbus, Ohio.....	156	14	142	9	1 to 10.2
Indianapolis.....	233	18	215	8	1 to 11.9
Kansas City.....	87	9	78	10	1 to 8.7
Little Rock.....	33	5	28	17	1 to 5.6
Memphis.....	65	8	57	12	1 to 7.1
Milwaukee.....	295	48	247	16	1 to 5.1
Newark.....	319	27	292	8	1 to 10.8
Pittsburgh.....	467	50	417	2	1 to 8.3
Portland, Me.....	127	9	118	7	1 to 13.1
Portland, Oreg.....	72	6	66	8	1 to 11
Providence.....	321	19	302	6	1 to 15.9
New Haven.....	261	18	243	7	1 to 13.5
Cleveland.....	490	23	467	5	1 to 20.3
Denver.....	106	9	97	8	1 to 10.7
Total.....	3,032	263	2,799	9	1 to 10.6

It will be seen by the above tables that the average proportion of male teachers to female teachers in the twenty-four cities represented is about 1 to 10. The average of all the cities taken together would probably vary not far from this showing. Philadelphia has the lowest proportion of male teachers, but the male teachers employed are actually engaged in teaching, each one of these, except the high school teachers, being confined to the care and instruction of the upper class of a boys' grammar school and having supervision over a very limited number of lower classes. The next lowest proportion is found in Chicago. In this city there are, in fact, in the elementary schools no male teachers, properly so called. The men reckoned as teachers are, in reality, supervising principals, each having a large number of classes and teachers under his direction and supervision. It will be seen that in Cincinnati the proportion of male teachers is about six times as great as that of Philadelphia and Chicago. This is the result of the policy of employing to some extent male assistants in the elementary schools. This is the case in the other large cities, where the proportion is comparatively high, namely, Milwaukee, New York, St. Louis, and Boston. In Milwaukee there are several male principals of primary schools, as well as some subordinate male teachers of district schools, and, in addition, a number of special male teachers of the German language; and hence the high ratio of male teachers as compared with other cities. In some cases ladies are employed as principals of large mixed schools composed of grammar and primary grades. In Cleveland the experiment was made several years ago of placing all the elementary schools in charge of female principals, three or four general supervising male principals being employed to visit the schools at short intervals to give assistance where needed in the discipline and management. On the

other hand, in Boston the girls' grammar schools have, with one exception, always been in charge of male principals.

Speaking of this peculiarity of our system, Mr. Francis Adams, of England, in his excellent work on the American free school system, remarks as follows :

The large preponderance of female teachers in the States will always render the occupation of teacher more or less a temporary one. As a matter quite of course, women do not look to teaching as a lifelong career. In England scarce one in twenty of the female teachers reaches her tenth year of service. Of the female teachers trained at Bishop's Stortford, it has been ascertained that their average school life was under five years. The proportion of female teachers in America is ten times greater than in England. Female teachers may have other advantages over males, and in the United States are generally conceded to have, but the length of their school life is not one of them.

Bishop Fraser, in his well known and highly valuable Report on the Common School System in the United States, which was published nearly twenty years ago, uses the following language in relation to this matter :

The vast majority of the teachers are females and most of them very young females. * * * There is a strong preference in the United States for the employment of females as teachers, chiefly on the score of superior cheapness, but also, in the estimation of many, on the ground of superior efficiency.

He, however, placed a high estimate upon the natural capacity of these ladies for teaching.

M. Buisson, in his report on our public schools, says :

The teaching corps counts a large proportion of female teachers ; the married instructresses are sufficiently rare ; classes of boys of every age are intrusted to female teachers.

From the same document, other remarks relating to this topic have been quoted under the head "Tenure of office of teachers."

Some years back, it was quite common for State superintendents of schools, in their reports, to mention as a matter of congratulation and as evidence of progress the increasing proportion of the female teachers ; but there seems to have been a turn in the tide. The question is coming to be discussed in more than one place whether the displacement of male teachers has not been carried too far for the best interests of our schools.

In 1873, the annual report of the Massachusetts board of education contained the following remarks on this topic :

It appears that, of the persons employed as teachers, one-eighth were males and seven-eighths females, the decrease of males for the year being 25, while the increase of females was 233. For upwards of thirty years this process of diminution in the number of male teachers and increase in the number of female teachers has been going on. During past years the board and their secretaries have frequently referred with approbation to the substitution of female for male teachers in our schools as a movement in the direction of progress. But the time must come, if it has not actually arrived, when it will be necessary to consider seriously whether the best inter-

ests of education do not require some limitation to this movement. If it be true, as most persons will probably admit, that females have superior aptitude for certain departments and situations in teaching and disciplining, is it not equally true that males have superior aptitude for other departments and situations?

The want of success, whether in respect to male or female teachers, taken in the mass, is due not so much to the want of natural aptitude as to want of special preparation and of adequate experience. The great obstacle to the acquirement of the needed experience on the part of females is in the shortness of the period of their service, and this again is the reason why they do not make a more thorough preparation for the work.

It is a noticeable fact that during the decade that has elapsed since the above suggestions were published by the board of education there has been no further increase in the proportion of female teachers employed in the public schools of the State, while previously there had been a constant increase from year to year for upwards of thirty years.

Of late years this subject has been considerably discussed in the New England Association of School Superintendents, and this body has expressed its opinion emphatically in favor of the employment of a larger proportion of male teachers.

There is, without doubt, a growing conviction among our prominent educators that a very considerable increase in the proportion of male teachers is a needed reform in our school economy. It is argued that teaching as a career—as a life work—is a necessary condition of the best results of teaching. With women, teaching is a temporary occupation, and this must be the case so long as they are required by social customs and sentiments to retire from the service as soon as they are married. The only effectual remedy, therefore, for the defects and imperfections inseparable from teaching pursued as a temporary occupation, as a makeshift, is the employment of a larger proportion of male teachers who shall devote themselves to the profession as a life work after having made the requisite preparation therefor and given satisfactory proof of competence. But a larger proportion of male teachers is desirable, not merely as a means of realizing the advantages of experience in teaching and that efficiency which comes from teaching as the one aim of life; it is desirable also because the instruction and training of boys above ten or eleven years of age requires the handling of a master rather than that of a mistress. It has been asserted by some who claim for women superiority over men in respect to aptitude for teaching that insufficiency of salary accounts largely for their non-continuance in the occupation of teaching. Experience, however, does not justify this assertion. In some quarters it has been claimed that the salaries of teachers of the same grade should be equal, without regard to sex. It is, however, a principle tolerably well recognized in pedagogy that, where the salaries of the sexes are equalized and the rate is high, the men displace the women, and where the rate is low the reverse happens: the women displace the men.

EXAMINATION OF SCHOOLS.

In considering this subject it seems desirable to define at the outset what is meant by an *examination* of schools, as distinguished from what is meant by an *inspection* of schools.

An inspection is a visitation for the purpose of observation, of oversight, of superintendence. Its aim is to discover, to a greater or less extent, the tone and spirit of the school, the conduct and application of the pupils, the management and methods of the teacher, and the fitness and condition of the premises. Good inspection commends excellences, gently indicates faults, defects, and errors, and suggests improvements as occasion requires. By the expectation of visits of inspection of the right sort, teachers are stimulated to fidelity and to efforts for advancement in efficiency. While inspection has for its object, in some measure, to stimulate, encourage, and guide both teachers and pupils, this is not the limit of its scope. It has another important purpose, namely, that of enabling the inspector to acquire valuable information as a basis for action in the administration of the system. But inspection does not undertake to apply tests to teachers or pupils, to be followed by serious sanctions. Its object is general rather than special. It is best that inspections should be made without previous notice and that they should be made by competent and experienced experts; but inspection by intelligent and judicious non-experts may be highly beneficial. The principals of schools should frequently inspect the classes for which they are responsible; the superintendent should, as often as practicable, inspect all the schools under his charge; and, of course, inspection is one of the duties of school committees.

An examination is different from an inspection, both in its aims and methods. An examination is a thorough scrutiny and investigation, in regard to certain definitely determined matters, for a specific purpose. It should proceed according to a prearranged scheme and it should not omit any element in the scheme. It seeks positive evidence and exact information in regard to all the matters comprised within its scope. Nor is this all. An examination not only implies the acquisition of facts within a prescribed sphere, but it also implies a weighing and considering of those facts and the making of a judgment upon them. The object of the examination is to arrive at a just estimate of merit or attainments or progress. This judgment, or estimate, then, constitutes the essence of examination, for it is the basis of awards which are of the highest importance to both teachers and pupils.

All examinations affect more or less both teachers and pupils; but, considered with reference to the chief objects to be accomplished, examinations of schools and classes are of the three following kinds:

I. Examination of classes, to ascertain their progress and to determine the rank of the pupils composing the class.

II. Examination of pupils for promotion, for graduation, and for distinctions or honors.

III. Examinations of schools and classes with reference, mainly, to the merit and standing of the teachers.

As the objects of these examinations differ, so must their methods differ, and they must be conducted by different classes of examiners. The general principle as to the qualifications of the examiner is that he should be competent and disinterested as to the result. He should know what facts to seek; he should be capable of estimating them at their true value; and, above all, he should have no relation of interest or feeling to warp his judgment.

I proceed to consider the three kinds of examination in the order above named:

I. The examination of pupils, to test their progress or to determine their rank, which I call class examination, has been of late quite extensively adopted, and in many places it appears to have been pushed to an injudicious extreme. This examination should be conducted by the class teacher, but under the supervision of the principal. If the examination is to be merely a test of progress, it may be, and, indeed, should be, both written and oral; but, if it is to determine rank, it becomes essentially a competitive examination, and must, therefore, be conducted in writing, except in branches to which this method is inapplicable; otherwise all the pupils are not subjected to the same test. It is obvious that an examination for the purpose of ranking should comprise all the branches taught; and here the difficult thing to do is to assign to the result in each branch its just relative value; that is, to determine what shall be the maximum mark or number for each branch. Perhaps the best criterion for determining this matter is the relative amount of time assigned to the respective branches in the program.

The class examination seems to have been introduced as a remedy for the evils of the marking system. But in some cases has not this class examination become an evil as great as that it was intended to remedy? When pushed to excess, the examining and marking of papers by teachers becomes an intolerable burden, and the pupils waste their time in giving proofs of their ignorance. The better plan would seem to be to combine judiciously the system of marking lessons with the system of examining for rank, pushing neither to an extreme. But I am inclined to think that the marks for conduct should in no case be combined with the marks for scholarship in determining the rank of pupils or in determining their promotion, unless promotion is based on a competitive examination and in a particular case the scholarship marks of two competitors are equal, but their conduct marks unequal: for conduct marks and scholarship marks are not commensurable, any more than yards and pounds.

II. Examination of pupils for promotion, for graduation, and for distinctions or honors.

1. Examination for promotion: This examination should be conducted by the principal, under general regulations and supervision, and with

the coöperation and advice of the class teacher. To take this authority from the principal is to deprive him of one of his most important functions. Promotions considered with reference to examinations may be of three kinds:

(a) Promotion of the class en masse or by seniority, without a serious test examination.

(b) The system of individual promotion by capacity. By this system the best in each class are promoted at any time when there is room in the class above. This amounts to promotion by competitive examination, and one of the essential things in a competitive examination is that the conditions be made known before the race begins. So from the outset of the preparation the competitors should be informed definitely as to the nature of the ordeal, namely, on what subjects they are to be examined, whether the sum of the class marks is to be the criterion, or whether the examinations alone are to be considered, or whether class marks and examinations marks are to be combined, and in what proportion. This examination should be conducted by the teachers of the competitors, as they alone know with accuracy what has been taught, but under the supervision of an impartial umpire. And it should be conducted in writing so far as this method is applicable.

(c) Promotion by examination of passage. By this system the identity of the class is preserved, as far as practicable, by simultaneous promotions; every member is subjected to a serious examination as a test of fitness for advancement. The results of this examination, combined with the lesson marks, determine the promotions, those pupils only who fall below a reasonable minimum being obliged to repeat the course of the class. To perfect this system the principal must, as occasion requires, exercise the prerogative of allowing exceptionally able pupils to "jump" a class and of degrading those who are exceptionally delinquent; that is, he must make some individual promotions. The class examination above referred to will give seasonable intimations to the pupils of their probable standing at the examination of passage, and thus afford them an opportunity to recover lost ground. By this system, which seems to me the best, while an examination is required, it is not a competitive examination, where only a minimum result is requisite for passing. Hence, the examination may be either written or oral or both. In all examinations which are not competitive it is desirable that both written and oral tests should be applied; for some pupils are strong on paper and weak in speech and others are weak on paper but strong in speech, and the examination should afford each an opportunity to show his real ability, since in an examination for promotion the point aimed at is not to know whether the pupil can answer on all the details of the matters taught, but whether he is capable of taking the higher stage with profit to himself and without detriment to the class.

The examination for transfer from one grade of schools to another (that is, from the primary to the grammar and from the grammar to the

high) ought to be conducted on the same principle as that for the passage from a lower class to a higher in the same grade of schools, but the control of this examination should be in the hands of an authority independent of both the grades concerned. The principals of both the grades, however, should be called in as advisory assistants. From the principal of the grade from which the transfer is to be made, the candidate's record should be required, and a certificate of probable fitness; from the principal of the grade to which the transfer is to be made, advice should be had and considered as to the minimum of requirement allowable for admission; that is, as to the character of the questions and the minimum mark for passing.

2. Examination for graduation. Here the principal should coöperate so far as to furnish the list of all the pupils entitled to be candidates, the scholarship marks of each, and his opinion of their maturity. But the actual examination ought to be under the control and management of the superintending authority, because, in a system of schools, it is desirable that all the diplomas of the same grade should have a uniform value; and this could not be the case if each principal should make his own standard. As a matter quite of course, the result of the examination should be combined with the record of scholarship. And it is desirable that the examination should be both oral and written. It is essential that the examination should cover all the subjects of the program of the graduating class, but not all the topics; nor should it go back to the matters of the preceding class, as they have been already satisfactorily passed. And in all sound educational economy some privilege of oblivion must be permitted to students. Nothing is more to be deprecated in the matter of test examinations than to demand of the examinees readiness in all they have ever studied.

Examination for graduation, as in the case of examination for promotion, should never be competitive, only a certain minimum of qualification being demanded. The level of this minimum must, of course, be raised as high as the best good of all requires. The graduating examination should be in accord with the program; that is, it should conform to the program both in respect to spirit and scope. The ranking of graduates according to their marks renders the examination in effect competitive. This is practised to some extent in western cities in connection with high school graduation. Its effect on girls, according to my observation, is decidedly injurious.

It is well known that school authorities sometimes fix in advance the percentage of mark requisite for promotion or graduation. Is not this highly unpedagogical? Of what avail is it to fix the minimum percentage before you know the character of the questions or the degree of strictness in marking?

3. Under the second class of examinations there is only one more variety to consider, namely, the examination for distinctions or honors.

From the nature of the case this must be a competitive examination, therefore essentially the same in character as that required for determining rank in the class.

III. General supervisory examination. This examination is made by the general supervisory agent or agents to ascertain the condition and progress not only of each and every school as a whole in every branch of instruction, but of each individual class embraced in the system, and by this means to ascertain also the merit and standing of the principals and their assistants. But the scope of this examination is not limited to the acquisition of information about the schools for the use of the governing authorities; an important part of its object is to stimulate teachers to efforts to keep up and increase their efficiency; to see that all the subjects of the program are taught in due proportion and kept abreast of each other; and to serve as a guide to the teacher, both as to methods and as to the interpretation of the requirements of the program.

This examination should be so conducted as to discover and appreciate merit, to encourage sound teaching: teaching that trains and educates; teaching that is solid rather than showy; teaching that aims at the highest good of the pupils, morally and physically, as well as intellectually. It is its purpose also to detect incompetency and unfaithfulness. In a word, its office is to give a just and true report of the teacher's work, and at the same time incidentally to afford the teacher, as far as possible, stimulation, encouragement, and guidance. Without the judicious examination of schools by well qualified experts, there can be no adequate guarantee of the faithful and efficient performance of their duties on the part of teachers. I say *judicious* examinations, for, if schools are not wisely examined—examined as only persons of thorough pedagogical knowledge, ripe experience, and sound judgment can perform this service—it is as well, perhaps, to leave them without it altogether. But an examination so conducted as to encourage true merit, to promote the use of the best methods, to regulate in the best manner possible the instruction imparted, both in respect to quantity and quality—it is by such examinations, if at all, that will be hastened the dawning of that day when there will be no cramming, no high pressure, no idleness, no excess, no deficiency, and no wasting of time or strength on the part of teachers or pupils.

The objects and character of this examination suggest the requisite qualifications of the examiner. In the first place, he should be independent, or, to speak more precisely, he should not be dependent upon the teaching corps. He ought to have had experience in teaching, and if he has had experience in grades similar to those in which he examines, so much the better. His mind ought to be liberalized by a wide range of educational reading and study. He ought to have a good deal of practical common sense. He should be more inclined to look on the bright side of things than on the dark side. He should look more sharply for

merits than for demerits. He should fear only two things: he should fear to do injustice and he should fear himself. He should be eminent for good breeding, as a guarantee of respectful treatment of teachers and pupils. And to make sure of the requisite sympathy, like Burke's lawgiver, "he ought to have a heart full of sensibility." In a word, for the successful exercise of this delicate and most useful function the very best educators are demanded. This function is next in importance and in point of difficulty to that of the chief supervision which overlooks the whole economy of the system.

Without this instrumentality no system can be complete. And so, instead of saying nobody is equal to such a work, and therefore it must be dispensed with, we should rather "get the best," and trust to the law of supply and demand to furnish ultimately the requisite combination of rare qualities for the most satisfactory performance of this duty.

As to the method and plan of proceeding something must be said. In the first place, this examination should be made by the examiner in person, and not by sending a set of questions to be answered. I am aware that the plan of testing the work of teachers by a simultaneous, uniform examination of all grades by printed questions is somewhat in vogue in some places. But I regard this plan as very objectionable. It is impossible to do justice by this plan. If this be so, no other objection to it need be raised. But even if it were possible to apply it without doing great injustice, it would do more harm than good.

Before the examiner begins his examining visits he should be prepared with a carefully matured scheme, set out in a blank or blanks, covering all the subjects of instruction and all the other matters to be taken into the account in estimating the merit of the teaching, discipline, and management of the class or school. The examination then consists in such observations and inquiries as may be needed to enable the examiner to fill his blanks on the spot; that is, to make up his judgment in detail and in general. Of course it would not be necessary to examine each pupil in every branch. In some branches it would be sufficient to witness the exercises as conducted by the teacher. This examination should be neither exclusively oral nor exclusively written, but a mixture of both methods. Printed questions are unnecessary. In elementary grades the responsibility of conducting the examination of a given class or school should be in the hands of one examiner. In the higher grades of institutions of instruction, where it becomes necessary to introduce departmental teaching, the work of examining may with advantage be divided in a manner corresponding to the usual division of studies into groups.

I have now outlined all the different kinds of examinations which seem to me required in a well organized and well managed system of public schools. It belongs, of course, to school boards to make the necessary provisions for these examinations.

Good teachers, who know what is best to be taught and how to teach

it, have a right to an examination of their schools by competent examiners, that they may have proof of the excellence of their work; moreover, their continuance and progress in well doing would be promoted by the sympathy and encouragement which the right sort of an examination would afford. Teachers of a different character, who have an imperfect knowledge as to what ought to be taught and a limited acquaintance with the best methods of teaching and possess little professional ambition, *need* frequent, judicious examinations and inspections to instruct them in their duties and to stimulate them to exertion.

Examinations may be the occasion of much good or much evil. The proper objects and uses of examinations is a subject which demands the serious attention of every one who is called to participate in the supervision of educational institutions. It is obvious that the utility of examinations depends wholly upon the plan upon which they are based and the manner in which they are conducted. It sometimes happens that a man quite unaccustomed to the ways of the school room, but possessed of good sense and right feelings, will make an examination very profitable to both teacher and pupils. On the other hand, a person of equal or superior intelligence and actuated by the best of motives may, from inattention to the principles which should guide his proceedings, produce the opposite effect. Teachers and pupils are depressed and disheartened, instead of being stimulated and encouraged. They have faithfully tried to do a good work; they *know* they have done it. But this is overlooked or underestimated, and they are admonished, gently it may be, for not doing something else which they could not do or which they did not know would be required of them.

The examiner should always remember that he is to a large extent shaping the subsequent teaching as well as ascertaining the preceding. Teachers are ever strongly tempted, even against their better judgment, to make their teaching conform to the kind of examination expected. They cannot be blamed for adopting such a course. Indeed, they might with greater reason be blamed for not doing so, since the primary responsibility is with the committee, who themselves examine or appoint the examiners, are the legal trustees of all interests of the schools under their charge, and it is within their province to determine what description of instruction shall be given. Teachers are with reason expected to give satisfaction to their employers and supervisors. Examinations are held to determine how far this end has been attained. But they do more. They virtually indicate what the examiner thinks the pupil ought to know, as well as to reveal what he does know. It is important that examiners should keep this fact in view, and conduct their examinations accordingly. If the examiner comes into the school every quarter or every month only to be entertained by exercises in some favorite style, the teacher will soon find it convenient, if not necessary, to be prepared for such a course.

But examinations should be conducted not merely with reference to

discovering what the pupil knows and to pointing out what he should know. They should go further and look to higher results. They should seek to find out what the pupil *is* and what he can *do*; or, in other words, to see what *discipline* of mind and heart and body he has had. It is true, this kind of examination is difficult and few are qualified for it; but it is necessary as a means of securing the highest style of teaching. We must not, however, fall into the error of supposing that its results can be adequately expressed by percentages. Let our examinations be extended into this higher sphere of education, and many teachers will be glad to occupy themselves with it to a greater extent than they have been accustomed to. But then it must be borne in mind that the teacher cannot prepare his pupils for everything in a limited period of time. There must be a choice of subjects in the general scheme and there must be a choice of topics and methods in each particular branch. The greatest injustice is often done by an unfair comparison of schools in some one branch only. A particular school may be immensely superior to another in one branch and yet be on the whole immensely inferior to it. And so with systems of schools.

If a teacher, in obedience to direct or indirect instructions or in the absence of all instructions, has adopted a certain course and has prepared his pupils for one sort of examination, he ought not to be censured for their failure when put to a totally different test, which he could not have anticipated.

Before a teacher is censured for any supposed deficiency, he should be permitted to show what he has attempted and what he has done and to give his reasons for his course. For instance, the examiner finds that the pupils of a certain school can recite the text of the books glibly enough, but that their reasoning faculty has not been duly exercised and trained, and that as soon as they are taken out of the routine of question and answer they are bewildered and cannot proceed. He is dissatisfied and suggests that the pupils should be taught to think, to reason, to investigate, to understand; that they should learn things as well as words. But on inquiry he might, perhaps, find that his predecessor, a year before, was displeased for precisely the opposite reason and strongly insisted upon the verbatim recitation of the words of the text books.

Examiners ought to avoid extreme notions on the subject of education. The good teacher, who is master of his art, if left sufficiently free, will give to each branch and each department of education its proper share of attention, neglecting none, making a hobby of none. And such should be the aim of the examiner, if he would make his examinations profitable.

And, finally, in examinations, the teacher's individuality should be duly respected. I do not mean here by individuality a peculiarity of opinion or theory which takes the liberty to oppose openly or quietly ignore the plain requirements of the regulations respecting the man-

agement of the school or the studies to be taught. Nor do I mean that oddity, capriciousness, whimsicality, or eccentricity should claim indulgence under the more respectable designation of individuality. Nor would I allow incompetency to escape its just criticism and its just estimate on the plea of the rights of individuality. But what I mean is that it should not be insisted on that each teacher should do everything in the same way and at the same time. Teachers should be allowed to make their own plans and pursue their own methods so far as is consistent with the interests of the whole system, provided that the desired results are produced.

The New York system affords an admirable example of wise provision for what we have designated as the general supervisory examination. The chief superintendent is furnished with a sufficient number of assistants, who are made responsible to him for the faithful performance of this service. The number of assistant superintendents at the present time is seven. Almost the whole time of these officers is devoted to this service, and the majority of them have by long experience acquired great skill and efficiency in the work.

All schools and classes under the charge of the board of education are examined by these officers at least once during the school year. In these examinations a careful and patient inquiry is made into the discipline, progress in study, punctuality of pupils, care of text books, ventilation—in short, everything that characterizes efficient management and makes an excellent school.—(Report of City Superintendent Hon. John Jasper, 1882.)

During the year 1882 2,500 classes were examined in this manner. For each class a blank is filled by the examiner giving the result of the examination in each branch of instruction and in the matter of discipline. There is also for each school a blank to be filled, indicating the character of the principal's general management. The grades of excellence are indicated not by figures, but by the following words: Excellent, Good, Fair, Indifferent, Bad. The blank so filled and signed by the examiner becomes the official, authoritative report of the condition and progress of the class and the merit and standing of the teacher or principal. These reports are submitted to the superintendent and recorded under his direction for the use of the board. If a report is unsatisfactory the teacher is sent for by the superintendent, who points out the deficiency and appoints a time for another examination, allowing a reasonable interval for another trial on the part of the teacher. The general results are tabulated and printed in the annual report of the city superintendent.

This plan of examination and inspection is no novelty in the New York system. It is as old as the system itself. It was so wisely contrived at the outset that the experience of more than two-score years has suggested no essential modification of its features. In this respect New York has not only been superior to the other large cities of the country, but has been at least equal to the foremost cities abroad. In

regard to its beneficial results it would perhaps be scarcely an exaggeration to say that it has been the mainspring of the success of the New York schools, both in instruction and management. By means of this well contrived examining agency the board has constantly in possession reliable information not only of the general condition of the vast school system under its charge, but also of the minutest details of every school and class. The records in the office of the city superintendent show the standing of every class in the system in every branch of study during every year for at least a quarter of a century back, as ascertained by the personal examination of a competent expert whose name is appended as a guarantee of the value of the judgment recorded. The following statistics are quoted from the report of 1882 as an illustration of the summarizing of the results of this supervisory examination: In discipline there were examined 2,567 classes, of which 2,387 were marked excellent, 170 good, 9 fair, none indifferent, 1 bad. In reading 2,510 classes examined, of which 1,915 were reported excellent, 559 good, 25 fair, 1 indifferent, none bad. In spelling 2,500 classes were examined; 2,190 were reported excellent, 281 good, 26 fair, 1 indifferent, none bad. In arithmetic 1,729 classes were reported excellent, 638 good, 121 fair, 6 indifferent, and 6 bad. In penmanship and slate writing 2,500 classes examined; 2,136 were reported excellent, 351 good, 11 fair, 2 indifferent, none bad. In geography, whole number of classes, 1,836; 1,061 were reported excellent, 248 good, 26 fair, 1 indifferent, none bad. In history of the United States, whole number of classes, 549; of these 489 were excellent, 56 good, 3 fair, 1 indifferent, and none bad. In drawing 2,500 classes examined; 83 per cent. were excellent, 15 per cent. good, and 2 per cent. either fair or indifferent.

The character of the principal's management in the several schools is shown in the following table:

GENERAL MANAGEMENT.

Schools.	Excellent.	Good.	Fair.	Indifferent.	Bad.	Total.
Male grammar.....	35	8	3	.....	.....	46
Female grammar.....	42	1	.....	.....	.....	43
Mixed grammar.....	8	3	.....	.....	.....	11
Primary department.....	60	8	.....	.....	.....	68
Primary.....	38	5	.....	.....	.....	43
Colored.....	2	2	.....	.....	.....	4
Total.....	185	27	3	.....	.....	215

It is a curious fact that the two cities which have generally been regarded as the two representative educational cities of the country have for many years afforded a striking contrast in respect to this very important element of school economy, namely, the general supervisory examination. While New York has been for many years exemplifying the right way, Boston has been simultaneously illustrating the wrong

way. Forty years ago the Boston school committee made what I should now call a general supervisory examination by printed questions;¹ this examination was limited to the pupils of the upper class of the grammar schools. The schools were then "double headed," the "grammar department" being examined by one subcommittee and the "writing department" by another. In the grammar department the whole number of questions put to them in geography was 31; definitions, 28; grammar, 14; history, 30; natural philosophy, 20; astronomy, 31. To these there should have been 57,873 answers, if each scholar had been able to answer. The answers were marked and tabulated by unknown non-experts hired for the purpose. The results, tabulated in detail with actual answers to many questions, comprising about 100 pages, were printed in the report; the statistics were so arranged as to bring out the comparison between the schools as distinctly as possible. In the body of the report the comparison is referred to and commented upon without reserve. The report says "it is perhaps the only statistical information which has ever been so embodied." It is to be regretted that it was not the last. Considering that the oral method of examination had been the only one known to the schools and that no intimation of a change had been hinted until the examiners appeared in the school rooms with their printed questions, and considering the unwarrantable use made of the results, this examination, famous in its day, must be regarded as in fact a merciless crusade against the schoolmasters. It should be said, however, in justice to the examiners, that they were men of liberal culture and that they were earnest friends of the public schools. After giving this plan a trial of two years more, its injurious effects became so evident that it was discontinued with scarcely a remonstrance from its originators, who had at the outset put great value upon it. In 1850, when the board had come to a full realization of their error in respect to this contrivance for getting at the condition of the schools and the merit of the teachers, the chairman of the examining committee (Hon. Francis Brinley) in his report said:

No just estimate can be formed of the schools by instituting comparisons between them exclusively based on such calculations; neither would a comparison of any particular school with itself for two years together in succession, made on such computations, indicate whether it were stationary, progressing, or falling off with the unerring accuracy such an array of figures would apparently demonstrate.

The objectionable numerical comparison which we have been considering was accompanied in the examiner's report by a verbal comparison scarcely less to be deprecated. A short paragraph was devoted to each school, in which the committee endeavored to express their opinion of its general condition and to characterize the qualifications and work of the master. This bad device had an existence of five years.

The creation of the office of superintendent, in 1851, made efficient *inspection* possible, but the extent of the system was from the outset

¹Already referred to under the head "Programs."

such as to render it impossible for a single officer to make personally the requisite detailed general *examinations* and reports. More than a quarter of a century elapsed before any practical steps were taken towards remedying this defect, although, during this period, the system was greatly developed and improved in almost every other respect. It is but just to say, however, that the devotion and ability of the corps of masters, who had been made really supervising principals in 1866, were such as to reduce to a minimum the necessity of a general supervisory examination in detail. The present system of supervisory examination has been in operation eight years with no essential modification.

The creation of the office of supervisor and the functions assigned to it have been referred to under the head "Supervision." The supervisors, six in number, are required to make a general examination of all the schools at least once a year, in order to ascertain their condition and the standing of the teachers, and to record the results for the use of the school board. The supervisors divided the city into six districts, to correspond with their own number, each assuming the principal charge of one of these districts for supervisory duties. They also divided the studies in all grades into six groups, each supervisor assuming special responsibilities in regard to one of these groups. But no general system of supervisory examination, properly so called, was devised or attempted to be carried out. The plan of record adopted to meet the requirement of the regulations was to record in a book, for the use of the board, against the name of each teacher, an estimate, graded on a scale of three, of ability in teaching, and an estimate, on a similar scale, of ability in disciplining, these estimates being authenticated by no supervisor's signature. Each supervisor adopted such a course as he saw fit for obtaining information upon which to base his estimate of the standing of teachers. The schools were visited by the supervisors at pleasure. If a supervisor saw fit to examine a class in one or more branches, he did so. Sometimes the advice of a principal would be sought as to the ability of teachers under his charge. No teacher was allowed to know the estimate of ability standing against his name. Although this system has been in operation for upwards of eight years, there is believed to be no existing evidence that any one class has ever yet received a single appropriate supervisory examination. The superintendent has no responsibility whatever in connection with the supervisory examinations.

One of the results of this system has been a regrettable demoralization of the teachers. Another result has been that the board has not been furnished with the needed authentic information as to the actual condition of the individual schools as to any one branch of instruction.

PROMOTIONS.

Promotion is of two kinds: (1) the transfer of pupils from a lower class to a higher one in the same school and (2) the transfer of pupils

from a school of a lower grade to a school of a higher grade. The management of promotions is a matter of great importance in school economy.

There appears to be no one well defined and generally approved plan of promotions in our city systems of schools, and there are probably few cities where the mode of conducting examinations is the same in the schools of the different grades. As to the frequency of promotions it is probable that in the greater number of schools the transfer of pupils from the lower classes to the higher takes place annually; and probably there is no system where the work assigned to a class is intended for more than one year of study. The period of one year may, therefore, be considered as the maximum interval between the regular promotions of classes. This period is found by experience to work well in high schools and in the upper grades of grammar schools, and especially in the highest grade. But where it is carried through all the grades of the grammar and primary school it is found to be attended with grave inconveniences and evils, even when transfers are made with a good degree of care and professional skill. The lower classes are invariably crowded; a considerable percentage of pupils is kept waiting a long period for admission, while there are many seats in classes above rendered vacant by the withdrawal of pupils before completing the course; the time for promotion is too distant to operate with much force on the minds of the younger pupils as a stimulant to application and meritorious conduct; in numerous cases the principal finds himself obliged to choose between the alternatives of transferring pupils not properly qualified to enter the higher class or subjecting them to all the disagreeable consequences of a repetition of a whole year's course by refusing them promotion. To get rid of the evils which inevitably result from the plan of uniform yearly promotions, some cities, going to the opposite extreme, have reduced the interval between promotions to a fourth of a school year, that is, about fifty days. St. Louis seems to have taken the lead in experimenting with this plan. In this city, although the grades or classes correspond to the years of schooling, as in most other cities, each grade is broken into four subgrades, corresponding to the quarters of the school time. This expedient has been resorted to in order, by reducing the intervals between the classes to a minimum, to facilitate individual promotions, and give the bright, capable pupils, a chance to go on, leaving behind those who are more slow and indolent. The point aimed at is to give flexibility to the graded system and maintain the desired closeness of grading in classes by frequent reclassification, instead of endeavoring to accomplish the same object by unduly restraining the foremost pupils and unduly urging forward the hindmost.

As the reclassification takes place at the end of each quarter, it is considered no great hardship for the poorer scholars in the class to repeat the course, and, on the other hand, some of the very best pupils are

enabled at times to skip a class, and by this means to shorten the time required for completing the curriculum. Quarterly promotions in all the elementary grades necessitate, of course, quarterly graduations and quarterly transfers of graduates to the high school. If this plan were carried out in the high school, it would involve the necessity of greatly multiplying the number of the classes and of quarterly graduations corresponding to the quarterly admissions. But this is not the case. Although pupils are admitted to the high school four times in the year, namely, at the end of each school quarter, in November, January, April, and June, graduation takes place only twice, at the middle and close of the school year; so that pupils admitted at the end of two successive quarters are brought to the same stage of advancement or at least to the same class before graduation.

This interesting experiment in the management of promotions is described in detail in the report of the superintendent, Mr. Edward H. Long, for 1880-'81, as follows:

In our schools each grade represents the work that can be accomplished by the average pupil in one year; but no effort is made to advance pupils or classes beyond their ability. No attempt is made to reach the end of the first quarter's work of any grade at the close of the first ten weeks of the year, or the second quarter's work at the close of the second ten weeks, &c.; hence, classes are at various degrees of advancement at all times throughout the entire course. In one of our eighteen-room schools, for instance, there are at least thirty-six classes, no two being equally advanced. In the lower and intermediate grades these classes are separated by intervals of from five to ten weeks. Bright, industrious pupils, who show an ability to advance more rapidly than the remainder of the class, can be placed in the next higher class, and those who fall behind for any reason can enter the next lower class. This system also makes it possible to reclassify pupils and organize classes at any time. Promotions can be made whenever a pupil or a class has completed a given amount of work. No gifted pupil is held back and no dull pupil is pushed beyond his ability. The eight grades of the district school course are completed by many pupils in much less than eight years, while those who require more time are not compelled to go back over an entire year's work whenever they fail to make the required examination for promotion to the next higher grade. The number of classes in the school, as well as the number of pupils in each class, can be increased or decreased whenever occasion requires, without injustice or injury to the individual pupils. The accession of pupils frequently causes a class to become too large or the withdrawals from school may deplete the number so that a class becomes too small. In the first case there can be a readjustment by advancing the more mature pupils to the next higher class; in the latter case, by promoting to the class the brighter pupils from the next lower class or by breaking up the class and distributing its members among other classes suiting their ability.

It is evident that this plan affords an effectual remedy for the cast iron rigidity of the graded system as administered in very many cities where only annual promotions are made, by written examinations, with questions furnished by the superintendent, the percentage for passing being fixed beforehand and the pupils in each room, under a single teacher, being always kept in the same grade and class, that is, "company front." But the St. Louis system, while it insures sufficient flexibility by frequency of class promotion combined with individual promo-

tion, is not without liability to abuse. While the "company front" plan, pure and simple, even when well administered, injuriously impedes the progress of the more talented scholars, and over-worries the slower ones in trying to make them keep step, and then condemns too many of them to loiter over the same course another year, the St. Louis plan, on the other hand, unless carefully watched and judiciously handled, is liable to hurry forward too rapidly or at least not sufficiently check the nervous, bright, and ambitious pupils, and at the same time to leave the phlegmatic, dull, and unambitious ones too much at liberty to take their own time for completing the course.

The Boston plan of promotion may be regarded as a compromise between these two extreme types. In the primary schools the pupils are promoted semiannually from class to class, mostly by classes, and also semiannually to the grammar schools, one of these promotions taking place at the middle of the school year, the other at the end of it. At the midyear promotion to the grammar school, promotion in the latter takes place by a readjustment of all the classes, so far as is practicable and desirable. By this moving-up process the seats which have been made vacant in the grammar school by the withdrawal of pupils are filled, and room is thus afforded in the lowest class for the in-coming primaries. It is found, practically, that, as a rule, no changes have to be made in the graduating class, and few in the next one or two rooms below it. At this midyear promotion in the grammar school a good opportunity is afforded for making all the necessary individual promotions, but in the lowest classes the promotion is mainly by class, a few individuals remaining in the rear and a few taking a "double."

At the end of the school year only, pupils are graduated from the grammar schools and promoted to the high schools. Long experience has developed no practical difficulty in admitting pupils to the grammar schools twice a year while graduating only one class a year, and at the same time adjusting the classification so as to meet the wants of all the pupils. While this feature of the plan, which is substantially that of the St. Louis high school, is incongruous in theory, in practice it works harmoniously and beneficially. In the high schools pupils are promoted annually on examination and scholarship record. The principals are responsible for the promotion of the pupils under their charge from class to class; and also the grammar school principals for promotion from the primary to the grammar, the former being under their charge as principals. This system, which has been in operation many years and is a curious historical growth, not the invention of any theorist, has on the whole worked very satisfactorily. The imperfections in its working could be easily corrected by a competent superintendent invested with the requisite authority. What has been unsatisfactory in its working has been due mostly to the unwillingness of the principals and teachers to break up the "company front" in exceptional cases, and put pupils of two unequal degrees of advancement in the same school room, under

one teacher—that is, to do to a greater extent than has been done what the St. Louis plan does universally. This plan, while it is less rigid than the “company front” plan on the one hand, has on the other less of the “go-as-you-please” in it than that of St. Louis. A few years ago an unfortunate mania for experimenting, without sufficient regard to the lessons of experience and the opinions of the wise, led to the abolishing of this plan of semiannual promotions and to the substitution therefor of the annual promotion. The result has not been a success, and the semiannual plan has been restored. The same experimenting mania took the promotion of the primary pupils to the grammar schools from the hands of the principals and placed it in the hands of the supervisors, who, for this purpose, made use of a rigid written examination, although the pupils should be only eight years of age. This latter innovation has proved as unsatisfactory in results as it is unpedagogical in principle.

In New York the system of promotion is very similar to that of Boston, the promotions from the grammar to the high school and the class promotions in the latter being annual, while the class promotions in the primary and grammar and the promotions from the former schools to the latter are semiannual.

The provisions respecting promotions in the primary and grammar schools are so unexceptionable in character that I quote them here as a model worthy of general imitation:

The principals of the schools shall examine all their classes in the prescribed branches of study at least twice a year, namely, immediately before each regular promotion, and record the results of the same in a book kept for that purpose. A report of all such examinations shall be sent to the city superintendent, who shall have it recorded in a book kept for that purpose. The adjectives to be used by the principals in such examination shall be the same as those made use of by the superintendent under the by-laws.

Promotions shall be made from the primary to the grammar schools semiannually, and not oftener, except by the written permission of the city superintendent; and no pupil shall be promoted from any primary school unless examined in all the studies prescribed for the first grade of the course of instruction for primary schools and found qualified by the principal of the department into which the promotion is to be made, and, when found qualified, such pupils shall be promoted without delay. Pupils may be transferred from the primary to the grammar schools before completing the first primary school grade with the consent of the committee on course of study and school books and on the recommendation of the city superintendent, to whom application may be made by the trustees in any ward, showing that said transfer is necessary in order to relieve the crowded condition of any primary school and to fill vacancies in the classes of the grammar schools. Pupils thus transferred to any grammar school shall, however, be taught in the primary grade until regularly promoted from the same, but may be counted as a part of the regular attendance of the grammar school.

I conclude what I have to say on this topic with the following summarized suggestions:

- (1) For the lower grades annual promotion is not sufficiently frequent.
- (2) The quarterly promotion is perhaps too frequent, especially if car-

ried through all the grammar school grades, necessitating quarterly graduation from the grammar school and quarterly admission to the high school.

(3) Better than either of these extremes is the plan of semiannual promotions in the lower grades and annual in the upper.

(4) It should be understood that a division (that is, the body of the pupils in one room under one teacher) may be composed of pupils belonging to two different grades or classes, if the just classification requires such an arrangement.

(5) Promotions should be made both by classes and individually.

(6) In determining the qualification of the pupil for promotion, his mental capacity, physical condition, and age should be taken into account, as well as his scholastic attainments; the examiner should ask himself, Is this pupil capable of doing the work of the next class without injury to himself?

(7) Promotion should not be made on the basis of a predetermined percentage of examination results. Promotion from class to class should be made by the principal.

(8) Promotions of primary scholars, comprising pupils from five to eight or eight and a half years of age, should not be made to depend on the results of a written examination.

EXHIBITIONS.

By exhibition is meant the public occasion of the graduating exercises of a school. Exhibitions are probably in vogue in nearly all public schools where graduating diplomas are given. But public occasions in the more important city schools, marking the close of the school year, were not uncommon before the public school diploma came into use. They were sometimes called annual public examinations as well as exhibitions. In former times, these occasions, by whatever name designated, partook largely of the nature of an examination. In some parts of New England in the last century and the early part of this it was customary for the clergyman to attend the closing exercises of the school in his parish or town and to question pupils on the Assembly's Catechism. From twenty-five to fifty years ago the chief feature of the occasion consisted in the examination by the principal, in presence of the assembled visitors, of the upper or leaving class in the various branches of instruction pursued during the year, this examination being frequently supplemented by questions from members of the committee present. Specimens of writing and drawing were handed round for inspection by the visitors; the best readers were called upon to read selections prepared for the occasion; some compositions were read, and if there were boys in the class some of them made declamations; the singing of simple melodies by the pupils was sometimes interspersed; then came the awarding of medals, where medals were in vogue, and the announcement of distinctions; and finally remarks were made by the chairman of the committee

and perhaps other members, and more especially by the men of prominence invited to be present for the purpose. Soon after the close of his presidential term in 1801, John Adams was invited to be present and deliver the Franklin medals at the annual exhibition of the Centre School in Boston, which occupied the site where the city hall now stands. One of these silver medals was proudly shown me by its recipient, then about ninety years of age. The exhibition is an instrumentality of great value in creating and sustaining public opinion in favor of public schools, as well as of stimulating the pupils to good work and good conduct and perseverance in well doing. The audience on these occasions is largely made up of the mothers of pupils belonging to the school, whose interest in the education of their children is thus greatly increased. At an exhibition where I happened to be present, one of the speakers enforced with an apt illustration the importance of completing the course; a mother present made her way to the speaker through the crowd at the close of the exercises, and, thanking him for his advice, said, "My son *shall* go through;" and the next year she had the pleasure of seeing him graduate with honor. This incident illustrates one phase of the influence of the exhibition. In the Paris schools what we here call exhibition is the occasion of giving out the prizes of books and money and announcing the merits of the scholars in the different branches, preceded by a formal address by some eminent person invited to preside on the occasion. One of these is referred to under the head of "Evening schools." The great occasion of this sort in France is the general concourse (*concours général*) which takes place annually in the great hall of the Sorbonne, under the presidency of the minister of public instruction. The object of this occasion is to announce the prizes resulting from the competition in scholarship of the several lycées and colleges of Paris and some suburban towns. An address is made by the minister; a Latin discourse is read by some eminent professor, long before designated for this honorable service on account of his distinguished scholarship;¹ and then the valuable prizes, consisting of books tastefully bound, are distributed to the successful pupils. The distribution of the prizes to the pupils of a boys' elementary school was one of the most interesting school occasions which it has been my fortune to witness. An eager crowd of decently dressed parents occupied every available inch of space in the hall. The boys were a set of compactly built fellows, with chubby faces of a healthy hue, who seemed cool, self possessed, and respectful in their bearing. I should think that every boy had at least an honorable mention for something. The prize boys were called to the platform to receive their books, and the little crown of green paper in imitation of the wreath of palm was placed upon their heads by the president or some person designated by him for the purpose.

¹ In 1883 this was abolished and a French discourse substituted.

No doubt the exhibition has contributed in no small degree to create in the public mind a favorable sentiment towards the schools; but like other good things it is liable to abuse. Care should be taken that too much time is not spent in its preparation. The tendency of the exhibition in our day is to become too showy and to degenerate into a popular entertainment. In girls' schools dress is apt to become too prominent a feature, thereby imposing a grievous burden upon the parents of the poorer children. At the same time it affords an excellent opportunity to the judicious teacher to develop in the pupils self respect and a reasonable independence and individuality in respect to dress, and to teach the shoddy aristocracy that a public school exhibition is not a fit place to make a display of Lyons silks and many-buttoned white kids.

The dialogue is admissible, both as an element of education and as a means of attracting a class of the public who would not otherwise attend, as the church choir swells the number of the hearers of the sermons; but the comic dialogue should be used very sparingly, if at all; and so humorous declamations and readings are allowable, but they should be choice in character and moderate in proportion. The reading or reciting of original compositions by their authors is of course the supreme performance. Nothing affords so good a test as this of the taste and culture of the teacher, and perhaps of his honesty, too, in rigidly suppressing all plagiarisms. The aim should be to show at the exhibition, as far as practicable within the limited space of time appropriated to such an occasion, the method and results of instruction and culture. But the æsthetic side of the culture will almost as a matter of course, and perhaps properly, be made more prominent than the more practical and scientific side; this will be shown in the specimens of drawing and calligraphy, in the singing, expressive reading and declamation, also in the bearing and behavior of the pupils, and in the appropriateness of their dress. If a pupil has special talent in any direction opportunity should be given, if possible, for the exhibition of that talent. I have known the master of a boys' grammar school to make his exhibition extremely attractive by a judicious application of this principle. Now a boy would be called on to sing a solo or play a tune on a violin; at another time a boy would give a brief specimen of his skill in playing the accordion and another exhibit his dexterity in shaking the ebony clappers.

I have known the exhibition in a high school for boys to be held for many years quite strictly to the presentation of the method and instruction in the several branches of the course; the pupils knew beforehand that they must pass the ordeal of a genuine, impromptu examination, and that every one of them was liable to be questioned in public on any of the studies of the year. These exercises were followed by a few original declamations. The exhibitions were always crowded, and it was not strange that they should have inspired its patrons with the strongest confidence in the value of the school.

In some grammar school exhibitions a serious error has crept in, namely, that of bringing upon the stage pupils of the primary grades, and even the youngest of these. Nothing could be more inappropriate. The occasion belongs to the graduating class. Of course it is desirable that as many as possible of the pupils in the next classes below should be present and witness the exercises; and it is allowable, and perhaps desirable, that one or two of the most proficient pupils in each of the rooms of the grammar school should take their places together on the stage and read each in turn, beginning with the youngest, a brief selection.

Occasionally opposition to exhibitions is heard in some quarters; teachers sometimes become weary of the labor of preparation and would be glad to escape the labor and trouble which it costs; but it would be a mistake to abolish the exhibition. It should be retained by all means, but it should be carefully guarded against all abuses: it should not be too ambitious; not much time should be devoted to special preparation for it; its exercises should consist mainly of a selection of performances in the routine work of instruction; the graduates should not be called out and designated according to their rank in the class, especially if the class is of girls.

RECESS AND NO RECESS.

From time immemorial it has been the custom everywhere to interrupt the work of the school session, both forenoon and afternoon, by a recess varying in length from ten to twenty minutes. During this recess the pupils are allowed or required to pass from the school rooms into the open air of the school yard, and there enjoy as much freedom from restraint as circumstances will permit. In former times the recess was usually the same for both the older and younger pupils, about fifteen minutes at the middle of each session. At present it is common to make additional provision for physical exercise, rest, and recreation in primary schools. In infant schools, recess is necessary after the lapse of one hour, and change of position and physical exercise should be allowed as often as once in thirty minutes. For pupils twelve years of age and upwards there may be allowed a session of two hours without recess, but such a session should be broken in the middle by some physical movements or rest.

The regulation of the city of Cincinnati respecting school hours and recesses is perhaps as judicious as can be devised for the same latitude, and it has borne the test of experience for a considerable period. It is, therefore, introduced here as a good model.

The hours of tuition and study shall be as follows: From September 1 to July 1, from 9 A. M. to 12 M. and from 1½ P. M. to 4 P. M., with fifteen minutes recess each morning and afternoon. Grades E and F shall be dismissed each afternoon one hour earlier than the time of closing school (November 2, 1874).

For the better guarding of the health of the pupils of grades D, E, and F (lowest primary grades) from injury from too long confinement in their school rooms, there shall be allowed to the pupils of these grades, at the close of every recitation, the space of five minutes for calisthenic exercises in the room, during which time the room shall be well ventilated, and the recitation shall be shortened for this purpose (November 7, 1853).

In some cities the teachers are forbidden to deprive children of recess as a punishment, and it would be well if this rule were universal.

In many cities the afternoon session for the grammar and primary grades has been shortened to two hours and the general out-door recess dispensed with in the former. For some time past there has been a tendency to go too far in lengthening vacations, multiplying holidays, and shortening sessions; but school boards are not likely to find any difficulty in persuading teachers and pupils to submit cheerfully to further changes in this direction. The experienced inspector knows very well that there is no better test of the tone and discipline of a school than is afforded by the manner in which the recess is conducted. In a first rate school he finds here and there a pupil excused from recess for the day for good reasons; he notices that every signal is instantly obeyed, that the marching is orderly and rapid, while the gait is natural and easy; he observes with pleasure that in the yard the oversight of the teacher or teachers in charge is vigilant and constant, and that the boisterousness and activity of play are repressed only so far as is required by due regard to the rights of the neighbors and the safety of the pupils from personal injury, while both noise and play are instantly checked by the signal therefor; and, finally, that on returning to their rooms the pupils lose no time in getting down to work.

What a drill, what a recreation and rest, what an exhilaration in all this! An interruption to study? Ten, fifteen minutes so spent, time lost? Say, rather, it is fire to the engine, wind to the canvas. But, aside from considerations of recreation and rest, the recess is an imperative physiological necessity, and in this necessity is found the explanation of its universality.

The universal conviction of the utility and necessity of the recess has prompted school authorities to provide as large lots as possible on which to erect school-houses. Immense sacrifices have been made for this object in all the more advanced educating countries. The extent and character of the playground have, in fact, come to be a tolerably reliable indication of the liberality of a community in respect to its schools.

Like other good things, the recess is liable to abuse. By injudicious and inefficient management its good effect may be largely offset by attendant evils. To avoid the possible or actual evils and inconveniences of the recess it has been proposed of late in some quarters to abolish the general recess altogether, and with it, of course, the legitimate use of all school playgrounds which have been acquired at such an enormous expense. This no recess plan has actually been introduced into several cities and towns in New York, and two at least in

New England.¹ The substitute consists in substance of a shortening of the sessions, permission of the pupils to leave the room individually, and indoor calisthenics and marching.

The precise program of this plan is as follows: In the primary and grammar grades the morning session begins at 9 o'clock and closes at 11.30 and the afternoon session begins at 1.30 and closes at 3.30. The three lower grades are dismissed in the afternoon at 3 o'clock. In these schools the mid-session recess, as it may be termed, for pupils to go out together into the yard, is dispensed with, but at 10.15 in the morning and at 2.30 in the afternoon five minutes are devoted to physical exercises and marching, in every school room, while the windows are thrown open sufficiently to change the air of the room. There are also, in some of the grades at least, other brief intervals of rest and change of position.

The objections raised by the advocates of this strange and surprising innovation against the recess are based on the assumption of injudicious and inefficient school discipline and school management. At recesses managed as I have seen them in many a school, and notably of late in Denver, how little would one find of bullying, moral contamination, personal injury, exposure to colds, or occasion for discipline! The demand for the abolition of recess must be adjudged a confession of weakness. The enemies of the school system have already so charged, and their charge is well founded. On the other hand, the benefits claimed for the no recess plan are based on the assumption that this plan is carried out by efficient and judicious teachers.

Should the recess degenerate into a nuisance the remedy would lie, not in abolishing the recess, but in reforming it by changing the management and arrangements of the school. The bungler destroys instead of reforming; the master reforms instead of destroying.

The no recess plan is based on the flower-pot theory of education, which finds little justification in experience. The way to educate a youth so that he shall have a sound and strong moral character is not to isolate him, but to teach him how to meet and successfully resist temptation.

The recess question has been set in its true light by Dr. William T. Harris,² in an able and sound piece of pedagogy, the substance of which is summarized in the following paragraphs quoted from its conclusion:

The recess has been established by the practical wisdom of the past school management, and it seems to meet certain physiological requirements of the young and growing individuals for whom it is appointed in a better manner than any other device yet proposed can do.

The moral argument used against recess applies against association in coming to school and in returning from it, as well as in remaining at the noon intermission, but is not of force where it is used, because the recess is the only interval where the pupil is out of school and yet completely under the control of the teacher. The teacher has no other opportunity so good as the recess wherein to teach the pupils to treat

¹ Rochester, Troy, Albany, Oswego, Newburgh, Woburn, and Newport.

² Journal of Education, June 23, 1883.

one another politely, by repressing the rudeness, personal violence, profanity, and obscenity that will break out, but must be eradicated. Before school, after school, and at the noon intermission the province of the teacher's authority overlaps that of the parent, and the power of the teacher is lamed.

But, even were the influence of the recess an immoral and dangerous one, the necessities of physiological laws and of the personal authority of the teacher depend so much on the observance of recess that the direct moral evil (were it far greater than supposed) would be insignificant in comparison to the evil from the other source, which endangers the whole moral structure of the school.

The no recess plan is a contrivance which relieves teachers from trouble and responsibility to the detriment of the pupils, and yet it is a contrivance of such a nature as to secure the general approval of teachers and pupils; hence the testimony of teachers and pupils in its favor should be taken with large allowance or thrown out altogether.

This reactionary movement against the recess is probably owing, in the main, to the sweeping substitution of women for men as teachers and principals even of large mixed schools. The oversight and management of grammar school boys at recess is a duty for which women are not well adapted, which they usually perform with reluctance, and from which they naturally desire to be relieved.

The true remedy, therefore, for the evils of recess, is not the no recess plan, but the employment of a sufficient number of judicious male teachers to manage the recess of boys in a proper manner.

Dr. Hancock, superintendent of schools of Dayton, Ohio, in speaking of this subject in his report, remarked as follows:

The best ventilated school building ever constructed is not so well provided with pure air as all outdoors; and no throwing up of windows, no free gymnastics indoors, can compensate for spontaneous and exhilarating exercise in the unrestricted atmosphere of the playground.

In the latest report (1883) of Mr. George Howland, superintendent of schools of Chicago, an experiment in the mode of conducting recess is mentioned as follows:

In many of the schools a change has been made with excellent results, the pupils of the first floor passing out and returning to their rooms, and then those of the second and third floors in succession. By this method time is saved to the individual classes, the smaller children are less liable to be injured by the larger ones, the school yard is much less crowded, and both teacher and pupil relieved of much annoyance.

AGE IN SCHOOLING.

With remarkable uniformity the organization of our city school systems is based on the assumption that pupils should terminate their elementary instruction at the age of fourteen years—that is, at the close of the fourteenth year. This is a just and wise assumption; it has its foundation in reason and experience. In France and England pupils are expected to finish the elementary course one year earlier. But it is believed to be understood in those countries that this limitation is only a temporary arrangement, and that in the near future the elementary instruction will be extended over another year's course. In the other leading educational

countries of Europe the completion of the fourteenth year is quite uniformly fixed upon as the age for going out of the elementary school. In regard to this matter our systems are no doubt in theory right. Fourteen is undoubtedly the true age for the girl and boy alike to take the first new departure in life, either by entering upon a high school course, a course in industrial training (either theoretical or practical), or by engaging in some manual occupation to earn a livelihood. And this limitation seems to be determined by three considerations:

(1) The mass of pupils must gain their livelihood by the work of their hands. That being the case, experience has proved that on the average fourteen is the best age for beginning the apprenticeship to manual labor. As a rule the longer pupils are kept in school after this period the less inclined will they be to submit to the inevitable drudgery of manual labor.

(2) On the other hand, fair schooling advantages up to this age will afford that degree of instruction which it is considered obligatory on the part of the state to insure to all youth.

(3) If properly instructed in the elementary course, the pupil is sufficiently equipped, both in respect to acquirements and mental development, to grapple with the more scientific course of instruction provided in the high school.

But, although right in theory, our systems fall far short of conformity to this ideal standard. On the one hand, the vast majority of pupils are withdrawn from school before reaching this age and before acquiring a competent elementary education. On the other hand, there are many pupils of both sexes still enrolled in the grammar schools who are fifteen or sixteen or even seventeen years of age.¹ This ought not to be; where pupils cannot and do not finish the grammar school course at fourteen years of age, making due allowance for exceptional cases, it may be safely concluded there is something wrong in the system. I say *system*, meaning thereby the agencies above and beyond the control of individual teachers, primarily the administration and supervision and secondarily the programs, text books, methods of teaching, required classification, examinations, promotions, and graduations.

INSUFFICIENCY OF ACCOMMODATIONS.

The rapid growth of city population has made it very difficult for many cities to keep pace in the supply of school sittings with the increase of children waiting to be instructed in the schools. So great is this difficulty in not a few important cities that inadequacy of school accommodations has become a chronic evil. As a mitigation of this evil the makeshift has been resorted to of limiting the attendance of a portion of the pupils to one session a day. In respect to this matter

¹ In Boston 2,800 boys over fourteen years of age in grammar schools.—(Superintendent's report, 1883.)

the annual report for 1883 of the president of the Chicago school board, Mr. Norman Bridge, speaks as follows:

Notwithstanding a considerable increase in school accommodations during the year, by reason of the opening of new buildings, there were 3,675 more pupils than the previous year who could gain admittance to school but half of each day, the total number thus deprived of their full school privileges being 12,919.

In referring to the same subject the president of the New York board, Hon. Stephen A. Walker, says in his report of 1881:

At the present time the school population of this city exceeds available school accommodations by several thousands. * * * Many of those who think New York public schools cost too much are not aware that at the present time the compulsory education act and the act which declares that "All children between the ages of five and twenty-one years" residing in this city "shall be entitled to attend any of the common schools therein" cannot be enforced in some parts of the city because the schools are not large enough or numerous enough to hold all the scholars who wish to enter them. During the year 1881 9,189 children were refused admission to the schools for want of room to hold them.

In Philadelphia the insufficiency has grown to alarming proportions. The president of the board, Hon. Edward T. Steele, states in his report for 1882:

When each of the sections was requested to furnish an estimate of the additional buildings required, it was made clear that over a million dollars were necessary to provide the buildings called for by these estimates. * * * There remain [of children between 5 and 15 years of age, inclusive] 60,000 children more than appear on our records of school attendance. With the most liberal estimate of children attending private schools, it is apparent that there are large numbers of children who are not attending school and for whom there are no accommodations.

The superintendent of the same city, Mr. James MacAlister, in a more recent report, says:

It is pretty certain that there are at least 20,000 young children in Philadelphia who do not attend school because there is not room enough for them in the public schools, and the number may be much greater.

Passing now to the Pacific coast, we find that in San Francisco, a city noted in former years for liberality in public school matters, the situation is no better than in the cities already referred to. In his last annual report (for the year ending June 30, 1883), Superintendent A. J. Moulder discusses at length the great evils suffered by the schools in consequence of the lack of accommodations. The drift of his remarks may be gathered from the following quotations:

Nearly all our schools are full to their utmost capacity. Most of them are overcrowded; and in many cases principals, in their anxiety to gratify parents, have admitted pupils far beyond either the legal or the reasonable limit; and still they come! * * * There are many classes in the department containing sixty-five, seventy, seventy-five, and even eighty pupils, many of whom have to be packed into the spaces around the walls and on the teachers' platforms. * * * We need the support of all our citizens, but if we alienate any considerable portion by refusing them accommodations for their children, we not only do them great injustice, but we excite an antagonism against the more fortunate who have secured admission for their children. * * * Where are the means to come from to build the new school-houses shown to be imperatively needed?

To this vital question the superintendent is able to give no satisfactory answer, as he finds that the funds at the disposal of the board are only sufficient to defray the current expenses of the schools; and he strongly deprecates the proposition to save money for buildings by reducing the salaries of teachers. Many other cities might be cited where the schools are suffering from insufficiency of accommodations; but insufficiency is believed to be the exception and not the rule. The city of Denver deserves to be mentioned as an example of a very young city of marvellously rapid growth of population, which has courageously and successfully met the demand for school accommodations sufficient for all its schoolable children, and in quality these accommodations, as has been stated elsewhere, are of the first order. Among the cities of the first order St. Louis may be mentioned as one which has successfully grappled with the problem of school accommodations. In a recent report the president of the board states that the funds of the board "are ample for all necessary school accommodations required now or in the near future. * * * There is now, happily, no question of the financial ability of the board to provide all necessary school facilities." The school law of Massachusetts, as already stated under another head, empowers school boards to provide needed temporary accommodations if their request for the same is not complied with by the municipal authorities. This provision of the statutes has proved a sure guarantee against the evil of insufficiency of accommodations. Where the school board is invested with such authority, it is never necessary to limit attendance to the capacity of the school-houses erected or to submit to the evil of chronic overcrowding.

In Boston it appears by the last annual school report that the whole number of seats in all the school-houses was 56,730, while the average membership—that is, the average whole number of pupils belonging to all the day schools—was 54,451, showing a surplus of 2,279 seats.

The rapid growth of urban population in all parts of the country has of course rendered necessary a correspondingly rapid increase of school accommodations, and although there are not a few cities where this necessity has been only partially met, on the other hand, in general, cities of all classes and in all sections of the country have made liberal sacrifices to provide the requisite school accommodations.

SCHOOL-HOUSES.

Our city school-houses are at once our glory and our shame. Considering the vast aggregate expenditure for the edifices derived from the voluntary taxation of the people, considering how large a number of them are fairly well adapted to the purposes for which they were designed, and considering the still greater number of them as possessing certain peculiar features of excellence, we may justly claim credit for our cities on the score of what they have done in this direction. And we may point with especial pride to the marvellous enterprise of the

new towns throughout the West, especially the far West, in providing commodious and costly school buildings. Witness the grand high and grammar school-houses of Omaha and Denver. Even at Cheyenne the visitor will find the children well accommodated in a spacious, well ventilated, well lighted, and well furnished brick school-house. In 1882, I found in the city of Durango, Colo., whose oldest dwelling was only eighteen months old, a noble two-story brick school-house, designed with good architectural taste and spacious enough for the accommodation of from three hundred to four hundred pupils.

But on the other hand there are in our school edifices, as they stand to-day, numerous mistakes, defects, and faults in matters relating to convenience, health, safety, and taste, which might have been avoided and ought to have been avoided. The same money might have given us much better school-houses, both in respect to beauty and utility. Much less money might have given us buildings just as good, not only for all practical purposes, but also in respect to architectural effects. These facts are far from creditable to us as an educated people.

No doubt great progress has been made in respect to city school-houses during the last thirty or forty years. To appreciate this it is only necessary to refer to some of the old landmarks. Horace Mann's memorable report on school-houses, of the date of 1838, contains a plan of the Wells grammar school-house in Boston. It is given as the best known type of a city grammar school-house. The accommodations consisted of two long halls, one above the other, each containing seatings for two hundred pupils, facing the windows of one of the longer sides. The platform extended the whole length of this side, upon the middle of which was placed the stove. There was no recitation room, no clothes room, and no appendage whatever to the large room, except a contracted entry and stairway and a small lobby for the principal's use. The building was three stories high, the ground story containing a ward room and a primary school room. Mr. Mann called attention to the fact that the pupils were seated facing the strong light and that the seats had no backs. The desks were double. This was the model school-house of forty-five years ago.¹

Place by the side of this picture the best grammar school-house of the present day, with its spacious corridors, its broad and easy stairs, its well proportioned and well lighted class rooms, its convenient clothes rooms, its teachers' rooms and wardrobes, its grand assembly hall, its single desks and chairs, its effective heating and ventilating apparatus, and we see how great has been the advancement.

What is the present character of the average city school-house, the building that we most commonly find in visiting the schools of any city? It is but just to say that this average building is, on the whole, quite comfortable and commodious, and may be called a fairly good school-

¹ This building was replaced by a modern structure in 1868.

house. The origin of its type may be traced to the Quincy school-house in Boston, which was dedicated thirty-six years ago. The erection of this building was a veritable new departure in school architecture in this country, being designed to accommodate a new type of organization;¹ up to this time the large hall plan typified by the Wells building had been modified only by the addition of one or more recitation rooms. The ground plan of this building, which was designed for boys only, was a rectangle, with small wings on the longer sides for entries and staircases. These wings were connected by a corridor crossing the main floor, with doors on either side opening into two school rooms and two clothes rooms, the school rooms being located in the corners of the building, each being lighted by four windows on adjacent sides, two on a side. Three stories contained twelve of these school rooms, the fourth story was finished as a hall, 80 feet long, 60 feet wide, and 16 feet high, with settee sittings for 700 pupils. With the exception of some of the largest Atlantic cities, the grammar school houses in the cities of the Northern States, from Maine to California, are of this type, with various modifications. The essential features consisted, first, in giving a separate room to each teacher; second, in grouping a sufficient number of these rooms in the same building to accommodate pupils enough for a good classification; third, in the provision of an assembly hall spacious enough to seat all the pupils accommodated in the building. Perhaps the most common modification of this plan is that which dispenses with the fourth story and its assembly hall. This modification, with some minor improvements, was closely adhered to in St. Louis during the superintendency of Dr. Harris, who, in his final report of 1878-'79, thus sums up his views of the matter:

(1) It is the policy of the board to build twelve-room buildings, three stories in height, having four rooms to the floor, and each one placed in a corner so as to get light from four large windows placed two in the rear of the pupils and two on the left side. Of late it has become the practice to group schools near each other on the same block, if possible, and place the whole group under one principal, thus giving him charge of twenty or more rooms. The school yards usually contain about 22,000 square feet, of which about 6,000 feet are covered with the buildings.

(2) These buildings are furnished with "combination furniture," each seat adapted to two pupils. Each room seats about sixty pupils, if in the primary grades; fifty if in the higher grades of the district schools.

(3) The two rooms on either side of the hall which runs through the house, dividing it into two parts, are separated by movable partitions, so that they may be united for general exercises, such as singing, &c.

The Peabody school-house is the representative building of this class in St. Louis.

This plan has important merits. It is very economical, but it can hardly be regarded as the best yet devised. The Jefferson school-house in St. Louis is a duplication of the twelve-room building, the two being connected by a gallery or narrow structure containing an entry and

¹ Plan and description in Barnard's *School Architecture*, 1854, page 202.

staircases. The buildings are sufficiently separated to allow the free entrance of light on all sides. This curious device is a step towards what we regard as the type of the future school-house, as will be seen further on. But it is objectionable on the score of its size, as it is intended to accommodate thirteen or fourteen hundred pupils, which is too many to bring to one building.

Another modification of the Quincy type found in many cities consists of a structure three stories high, having six school rooms on a floor, or six on the two lower stories and an assembly hall with two or more rooms on the third floor. Excellent examples of this modification are found in Hartford, San Francisco, Chicago, Cleveland, Boston, and elsewhere. The Case school-house, in Cleveland, which belongs to this class, was represented in the report of the French Educational Commission to the Centennial Exposition as being the best American grammar school-house which the commission inspected. Although this building has some peculiar merits, it is not without grave defects which should be avoided. The gravest is the darkness and closeness of the corridor in the centre of each floor. This is a common defect in this modification, and is noticeable in the girls' high school in Boston; but in the Case school the fault is marked in the extreme. Besides, it is without the assembly hall, and the lighting of the rooms is not in accordance with the most approved plan of the present day. The peculiar merit of the excellent school-houses in Denver is the absence of the above mentioned common defect in respect to corridors. The Gilpin school-house in that city, which I inspected in 1882, two stories high, with six rooms on a floor, is an admirable specimen of this class. In the Whittier school house, since erected, some further improvements have been introduced. School-house building in this wonderful young city has been conducted from the first by the board and superintendent (Mr. Aaron Gove), aided by the accomplished architect of the board (Mr. Robert S. Roeschlaub), in the most judicious and successful manner and with the strictest regard to economy, as is evident from the exhaustive report on the subject published by the board in 1883. The original New York school-house was three stories high, each floor being occupied by a separate school, viz, the lowest by a primary school, the middle by a girls' grammar school, and the upper by a boys' grammar school. The characteristic feature of each floor was a spacious assembly hall, adjacent to which were a number of contracted and rather poorly lighted school rooms. In the course of the development of the system, the schools that were originally grouped in the same building have been provided with separate and independent buildings. The type, however, has been preserved, i. e., the grand assembly hall as a characteristic feature of each building, to which the essential requirements of the school rooms have been somewhat sacrificed. In the best buildings, however, more recently erected, the school rooms have been much enlarged and improved. The New York school-house seems to form a class by itself. It has not been imitated

to any extent by other cities. The school-houses of Brooklyn and Baltimore constitute another class, which is only one step removed from the type consisting of a single large hall. That step consists in dividing the large hall into school rooms by means of movable glass partitions. This plan seems to be founded on the twofold idea of saving expense by making the same floor space answer the purpose both of school rooms and an assembly hall and of enabling the principal to inspect the doings in all the class rooms without leaving his desk. But the most that can be said in favor of this plan is that it is an extremely cheap mode of providing shelter for scholars. Philadelphia is remarkable as having no general policy in reference to school architecture, owing to the fact that the buildings are erected by the local school boards. In external appearance its buildings are in many cases quite attractive, and some of the buildings, such as the H. W. Haliwell and Thaddeus Stevens, fairly belong to the first class. There are others, however, which must take a low rank; one of these is of such preëminent badness in respect to the cardinal requirements—regard for health, convenience, and safety—that, considering the circumstances of its erection, special reference to it seems to be demanded in this survey of the character and tendency of our school architecture. It is in the second city in the Union; it was not erected back in those times when good models for imitation were difficult or impossible to be found; it is a new structure, having first been occupied in the Centennial year; it was preceded by such buildings as the Haliwell and Stevens, in the same city; its site lies between Independence Hall and a marble city hall of surpassing grandeur, costing many millions. Its utter wretchedness of plan was not necessitated by scantiness of means, since its walls are of handsome and costly stone work and its whole exterior finish is sufficiently ornate. Its ground outline is nearly that of a square. As the plan of its three stories is identical a description of one will suffice. In one corner is a teachers' private room, in each of the other three corners are an entry and staircase. The rest of the floor space is occupied by four school-rooms so arranged as to form a cross; three of these rooms are lighted only by means of a large bay window at one end, within which is located the teacher's platform; a fourth is lighted by two moderate sized windows at one end, the platform being placed in front of one of them. The rooms open into each other in the rear. The two smaller rooms are 22 by 26; the two larger 25.6 by 26. Comment on the features of this plan would seem to be superfluous; its existence is proof of a defect in the system of administration. This specimen of school architecture will appear the more surprising when it is remembered that it came into existence after the board of education of Philadelphia had caused a thorough sanitary examination of the school-houses and school children in that city, and had printed a report of surpassing interest on the subject, comprising the tabulated results of the inquiries submitted to teachers and scientific experts. Of this document I remarked eight years ago:

"The Philadelphia board deserves the highest credit for thus boldly exposing the sanitary defects of the schools under its charge."¹

It may be that there are several cities where a school-house belonging to the same category may be found; only one, however, of recent construction has come under my observation, and this is in the enterprising and flourishing city of Buffalo, and in one of its best sections. The main building is oblong in shape, with a long, narrow wing on either of its long sides. The lower floor is arranged as follows: A class is crowded into each of the narrow wings; the main floor is divided into three apartments; in one end are seated the pupils of the upper grade, with only light in front. In the apartment at the other end of the floor the pupils have light only at the back. The class in the middle has the four classes already mentioned on the four sides of the space which it occupies. All its light is secondary, the greater part of its very scanty supply coming through the glazed partitions which separate it from the rooms in the wings. The accommodations on the floor above are of the same description. It seems incredible that such a school-house could have been erected in a city which had the educational enterprise and liberality to secure the location in its midst of a noble State Normal School.

Three school-houses of the grammar school grade, recently erected in three important representative cities—Providence, Denver, and New Haven—illustrate very well the excellences and defects of the best school-houses of their grade in the country. They are all regarded as model buildings in the cities where they stand. In ground plan and general arrangement they all adhere very closely to the old Quincy school type of thirty-six years ago. But they are all three stories high, whereas the Quincy school was four. They are all built of brick and in the material of interior finish are essentially alike and sufficiently good. Each of these buildings contains eight school rooms, intended to accommodate about fifty scholars each. The Providence (Elmwood) building cost about \$51,000 and the lot about \$8,000 in addition. The New Haven building and lot together cost about \$60,000. The Colorado building was built much more economically, the cost of the building, excluding furniture, being about \$27,000, or \$67 per pupil, while the Providence building cost \$127 per pupil, furniture included.

No doubt these buildings all are fairly entitled to be called good; and yet I cannot admit that any one of them is worthy to be regarded as *the* model to be generally copied, because each one has imperfections which might have been avoided or a lack of some excellences possessed by the others. The limits of space will permit reference to only a part of the *peculiar excellences and defects* in each.

The Providence building makes no improvement whatever, in plan and arrangement, on the old Quincy plan. It is essentially the same.

¹ Thirtieth Semiannual Report of Boston Public Schools, 1876.

In lighting it is inferior to it. In lighting it is unilateral. This is right in principle, but in the application there is a fatal error, the same that was made in Boston in the Rice and Dudley schools when the unilateral principle was first applied, some twelve years ago, by making the rooms too wide, that is, the distance from the windows to the opposite side of the room too great, namely, thirty-one feet, whereas it ought not to have exceeded twenty-five or six. The hall has a seating capacity of 800, which is twice as large as is needed. It has four teachers' rooms 12 by 14; three of these are superfluous. It has no room for library, apparatus, cabinet, or museum. It has no gymnasium. It has no apartments for janitor's dwelling. On the other hand, the corridor is not encumbered with stairs to cut off outdoor light and air at the ends, but its broad stairs of easy grade, inclosed in brick walls, are located in wings on either side of the main building, and the outer doors open *both ways*, thus favoring, as far as possible, safe egress.

Some of the peculiarities of the Denver (Emerson) building are the following: (1) Janitor's dwelling apartments, four neatly furnished rooms for janitor's living apartments (the dryness of the Denver soil rendering the basement available for this purpose); (2) two rooms in the basement are fitted up with lunch tables and benches, one to be used for the boys, having access from the exterior, and one for the girls, having access from the exterior and interior; (3) each school room has attached *two* clothes rooms, one at either end, both of which open into the school room and into the corridor; (4) the corridor is very spacious and is better lighted and ventilated than is usually the case in buildings of the block plan; (5) there is no assembly hall, gymnasium, or room for apparatus, collections, library, &c.; (6) the height of rooms is 16 feet. Fourteen feet is regarded as the maximum height allowable for school rooms; 13 feet may be regarded as the standard.

Of the new building in New Haven (Welch Training School) the architect remarks:

It was the aim of the committee to embody all the latest improvements and features that experience and experts have shown to be of value in school architecture, and especial attention has been given to convenience of plan, lighting, heating and ventilation, sanitary arrangements, and facility of exit.—(Report, 1883, of Superintendent S. T. Dutton.)

The school rooms of this building are peculiarly excellent. The length is 31 feet and the width 25 feet. On the long side there are four windows, equally distributed, these windows being at the left of the pupils as seated and amply sufficient for light. But there are, in addition, three windows at the rear of the pupils, which seem to be somewhat superfluous, but may be of service under some circumstances. It has two light and airy basement rooms, said to be reserved for evening schools, which would serve extremely well for gymnasiums, one for each sex. The system of heating and ventilating is worthy of special attention. It is thus described by the architect, Mr. L. W. Robinson:

The building is heated throughout by steam, indirect radiation, and, in combination with the system of ventilation, it is designed to have an ample and constant flow of fresh, warm air to every room in the building in all kinds of weather. The steam coils are placed at the bottom of the heating flues and supplied with fresh air from outside the building through brick air ducts, the outside openings to these ducts being some 10 feet above the ground, so as to avoid the possibility of introducing "ground air" into the building. The warm fresh air enters the rooms at a height of about 7 feet above the floor and finds an egress at the floor on the same side of the room in each case, after making a complete circuit of the room, so to speak, and leaves the building through a proper ventilating flue. By this arrangement the air in the rooms will be changed from five to six times an hour during ordinary winter weather.

It is to be regretted that the architect does not state what he means by a proper ventilating flue or how the effective exit of the foul air is insured.

The buildings we have been considering are, in the main, for grammar schools, but in a large majority of the cities the primary schools are for the most part accommodated in separate buildings. There is, however, no characteristic type of a primary school-house which has been generally adopted. They are of all sizes and descriptions. The individual school rooms in these buildings, however, are essentially the same as the school rooms of the grammar school-houses. In size they vary from the building with a single room to the mammoth primary school-house in New York, with its one thousand or twelve hundred pupils. In general the primary school accommodations are perhaps inferior to those of the grammar schools.

The essentials of a good primary school-house do not differ materially from a good grammar school-house. The difference in size—that is, in the number of rooms—must be governed, of course, by the system of organization. In Boston a policy with reference to the plan of primary school buildings was adopted in 1860 and is still in vogue in its essential features, although some improvements in details, especially in the proportions and lighting of the school rooms, have been introduced, and there has been quite an advance both in mechanical construction and architectural design. In his report accompanying the model plans, drawn under his direction, Superintendent John D. Philbrick says, 1860:

A building best adapted for our present system of primary organization, where it is fully carried out, would be large enough to accommodate one division¹ of each class² in this grade, or six divisions, a separate school room, with its necessary appendages and one teacher, being provided for each division. But a perfect uniformity in the arrangements of the schools of a city is seldom practicable or expedient, although the same *principles* of gradation should be kept in view. Hence, it may be found desirable to erect primary buildings, containing one, two, three, four, six, or eight rooms, the essential features and purposes of all being the same.

The primary schools of the maximum size erected during the last ten or twelve years are limited to eight school rooms each.

¹ *Division* meaning the pupils in one room under one teacher.

² *Class* meaning one of the six primary grades, each having a course of half a year.

In the city of Waterbury, Conn., six buildings have recently been erected for intermediate and primary grades, which are probably on the whole among the best specimens to be found, considering the purposes for which they were intended. In speaking of the erection of these school buildings, the secretary of the State board of education, Hon. Charles D. Hine, in his report for 1884, says :

The school officers have made a careful study of the subject of school architecture, and in convenience, healthfulness, and economy these buildings are models of school-houses for intermediate and primary grades.

It is a fact worthy of notice that the school rooms in these buildings are, in respect to proportion and lighting (two elements of prime importance in the school room), essentially the same as the primary school room referred to above as the standard in the Boston primary schools twenty-five years ago. The architect of these buildings seems not yet to have learned that the square school room, lighted on three sides, can no longer be regarded as the standard pattern. These buildings are all two stories high, three containing two rooms each and three four each. The ground plan of the latter is an oblong, comprising two square rooms, with space between for the clothes rooms. On the middle of either side is a small wing for a staircase, and on the upper floor an anteroom. A marked peculiarity of these buildings is that each room is provided with a fireplace and open grate, where a fire can be kept for ventilation. This fireplace is located in the middle of the side opposite the teacher, and in the rear of the pupils as seated. The plan of the clothes room is a unique contrivance. Each school room has two, located in the corners at either end of the teacher's platform. Each has a window opening upon the platform, so that the teacher from her seat has a full view of the interior of each room. Each clothes room is ventilated through the roof, and the only access to it is through the school room. Each room accommodates fifty pupils and is furnished with the highest type of school furniture, namely, single desk and independent seat.

The aisles between the desks are wide, so that the teacher can pass through them without brushing against the desks. In some buildings there are passage ways twelve to fourteen inches wide across the room in the rear of every seat, thus separating a pupil entirely from his neighbor. The average floor space for each pupil is unusually large, being about twenty-six square feet.

Here seems to be too much of a good thing. The school room should be neither too large nor too small, but just large enough. It is a grave mistake to suppose that you cannot make a school room too large. Now, twenty-six feet of floor room to each of fifty pupils would amount to thirteen hundred square feet. This would require a room thirty-five feet square. In a square room, the best arrangement of the desks would be in the form of a parallelogram, the longest side being parallel to the teacher's platform. Fifty-six desks, a fair number for a primary school room, arranged in such a room in the best manner, the desks being one foot and a half in length, which is sufficient, the centre

aisle being two feet wide, and the six side aisles sixteen inches each, a width sufficient for all practical purposes, would occupy a floor space twenty-two feet by fifteen, or three hundred and thirty square feet. A room twenty-eight feet square and thirteen feet high, with seven hundred and eighty-four feet of flooring, would be sufficient for the accommodation of the fifty-six primary pupils seated as above described, supposing the daily attendance to be fifty and allowing a little over two hundred cubic feet of space per pupil. "At the rear of the room and upon the sides are wall settees, with lifting seats for classes in recitation. These settees are made in short sections and are bracketed to the walls, and when lifted allow ready access to the blackboards." I regard this provision of wall settees as an objectionable superfluity. In a graded school, recitation settees are never needed. Primary and intermediate scholars should never sit at recitation and no recitation should be too long for them to stand.

In these criticisms of some details it is not intended to detract in the least from the great credit which is no doubt due the school officers for the pains they took to make these buildings what they should be in all respects. But, while willingly admitting that they deserve high commendation because they did well, still it cannot be conceded that they combined in their buildings all the excellences that might have been secured for the money which they cost.

The liberality of municipalities in the erection of high school-houses has been remarkable and it seems to be steadily increasing. These buildings are in general architecturally more ornate and pretentious than the buildings for grammar schools, but the average high school-house is not so well planned as the average grammar school-house. There seems to be no type of a high school building which has gained general acceptance. The greater number of the buildings, however, consist of one or more study halls, with recitation rooms attached. In the smallest cities we commonly find a single study hall, where the pupils of all the classes are seated when not engaged in recitation. In addition to this hall, on the same or a different floor, there is the requisite number of recitation rooms. Where the number of pupils is too large for this arrangement we often find a study hall for each grade or class, with recitation rooms attached. In the largest cities for the most part the high school buildings have the essential features of the grammar school buildings which we have described, i. e., a certain number of class rooms, where the pupils are permanently seated, and one general assembly hall. In some buildings these two characteristics are combined, the pupils of the lower classes being permanently seated in class rooms, while those of the upper classes are seated in study halls having recitation rooms attached. It is a difficult problem to adapt a high school-house to all the wants of a large school for both sexes, pursuing three or four courses of study and taught on the departmental plan. It is comparatively easy to devise a satisfactory plan for a school

for one sex, pursuing one course of study, as is the case with the high schools of Baltimore, New Orleans, Charleston, Philadelphia, Louisville, New York, and Boston.

A glaring fault of many high school buildings otherwise good is the imperfection of the provision for lighting. This fault is particularly marked in the splendid new high school building in Providence, and the same may be said of the grand new high school building for girls in Philadelphia.

A still more serious, as well as a more general, fault in the plans of existing high school-houses is the arrangement requiring too much climbing of stairs, especially in the case of girls. In a large eastern city a high school-house was recently erected in which the study hall for all the pupils, boys and girls, was placed in the fourth story, while the recitation rooms are placed in the different stories below. This may stand as the type of the worst cases. Baltimore, on the other hand, can boast of affording the best example of the opposite kind. Her high school-houses for girls are only two stories high, the study hall being placed in the upper, which is reached by broad, easy, and not too high flights of stairs, and the recitation rooms in the lower. A visit to these buildings by Boston school officials many years ago induced them to condemn the four-story plan of grammar school buildings.

BOSTON HIGH SCHOOL BUILDINGS.

As the new high school block in Boston for the accommodation of the two central boys' high schools, the Latin and English high, comprising two connected school-houses nearly identical in plan, is a new departure in our American school architecture and was intended to embody the essentials of a good building, its leading characteristics are here presented:

(1) It is not a solid rectangular block, but is built around a large interior court, divided in the middle by a connecting annex. This, I believe, is the first instance of the realization of this court plan or idea on a considerable scale in any school building in this country. The most serious defects in our large school-houses have resulted from the ignorance or disregard of this idea by our architects. This idea is distinctly foreign in its application to school-houses. The principle may be thus stated: *So plan the building that it shall be in no part wider than the width of a school room with the width of the corridor added.* We have college and other educational buildings with wings at right angles to each other, but not planned in accordance with this principle. The superiority of this *court plan* over what may be called the *solid plan*, which has hitherto prevailed, is found more especially in the advantages it affords for light and air. So important do I consider this idea in school-house building that I doubt whether there can be a first class school-house of any considerable size in which it is not applied.

(2) The school rooms are all nearly identical in character and they all have the essential characteristics of the model school room as described further on; size, 24 by 32 and 14 high, giving 268½ cubic feet to a scholar on the estimate of forty to a room.

(3) The light and airy corridors, so immensely superior to the corridors in the buildings in the solid or block plan.

(4) The great hall for military drill, which is not a foreign idea. This is the only one connected with a public school, in any country, that has come to my knowledge. A secondary but not unimportant consideration in favor of such a hall is that it may be used as a grand assembly hall for public occasions. The dedicatory services were held in this hall, which was found to accommodate more than three thousand persons.

(5) The gymnasium. This hall is larger, I think, than the great Turnhalle of the city of Berlin. No credit, however, is claimed for its extraordinary size. It is really larger than is necessary, and was made so large simply because, under the circumstances, it cost little or no more than a smaller one would. But a sufficient separate room set apart for gymnastic exercises is so exceptional and at the same time so-desirable a provision in our school architecture that this feature is entitled to claim recognition as an important characteristic.

(6) The chemical annex of the English high school, comprising the laboratory and lecture room, both in respect to its detached location and to the completeness of its fittings and equipments, as well as its adaptation to the wants of such a school.

(7) The character of the lecture rooms for natural science, each with two cabinets attached, one for physical apparatus and the other for natural history collections.

(8) The libraries, both in respect to their æsthetic character and their adaptation to the purpose.

(9) The ample provision of conference rooms for teachers and of offices for the head masters and janitors.

(10) The unique and successful provisions for water closets and urinals on each floor.

(11) The treatment of the assembly halls. Their location on the upper floor of the central pavilions made it practicable to give them the requisite size, symmetry, proportion, and lighting. In respect to ornamentation they are yet unfinished. The walls and ceiling will in time be appropriately frescoed and the friezes decorated with sculptured reliefs. But the time has not arrived when we can dream of rivalling in artistic treatment the finest school halls in Europe, of which that of the Akademisches Gymnasium in Vienna and that of the city corporation school of London are the supreme examples.

(12) The drawing rooms of the two descriptions—that is, model drawing and copy drawing—all spacious, perfectly lighted, and having every desirable quality, each being provided with two adjoining rooms, one on either end, of ample size, for the safekeeping of models, copies, &c.

(13) The fire proofing, a characteristic of immense importance, and probably never before attempted to the same extent in this country.

(14) The iron staircases—in respect not only to their fire-proof material and rubber padded steps, but in respect to their spaciousness, being nowhere less than 6 feet wide, and their number and convenient arrangements.

(15) The perfection of the lighting of every part of the vast block and the complete success of the system of heating and ventilation.

(16) Dwelling apartments for janitors.

(17) The composition of the design, the harmonious, symmetrical, and convenient arrangement of all its parts—an arrangement which combines, in a most remarkable degree, both æsthetic and pedagogical requirements. Herein, in my judgment, the genius of the architect¹ is most signally displayed.

(18) It is a double building, two connected buildings on one lot, constituting one block. It should be distinctly understood that this feature is *not to be regarded as a merit*; it has the advantage of economy and convenience in respect to drill hall and gymnasium, but it was justly regarded by the designers of the building as on the whole an objectionable feature. Separate buildings at some distance from each other would have been better. Circumstances necessitated the union.

(19) This building is the result of a serious attempt, under favoring conditions, to combine in one structure all the known elements of a good school-house of its kind as illustrated in school architecture at home and abroad.

The prototype of the Boston building was the Akademisches Gymnasium in Vienna, which ten years ago, it is believed, was the best classical school building for boys among the German speaking people. It was built by the government as a model school, the design being the product of the best architectural talent and the best pedagogical talent working together. It is built on a square lot encircled by streets inclosing a square interior court. The lighting is perfect. No part of the structure is wider than the combined width of a school room and corridor. On the front side, the corridor is very wide, affording width for the hall located on the third floor, which is perhaps artistically the finest educational hall in Christendom.

CITY OF LONDON SCHOOL.

In this connection mention must be made of the masterpiece of English school architecture. This is the building for the City of London School, a classical school for 680 boys between the ages of seven and nineteen, erected by the city corporation since the completion of the Boston edifice. The cost of this building, together with the site, amounted to a

¹ Mr. George A. Clough, city architect.

million dollars. No pains or expense were spared to make this a model school-house in all respects. Its magnificent site fronts the Victoria embankment and contains 65,340 square feet of land, valued at \$475,000. The ground plan is L-shaped; the shorter arm of the L is the hall block facing the embankment containing the library, administration rooms, and grand hall. The longer arm of the L, facing a new side street, is the teaching block, containing hat and coat room, dining room, and covered playground in basement; eighteen school rooms on the first and second floors; natural science school and lecture hall and two class rooms on third floor; a common room and anteroom for assistant masters. A kitchen, with its appurtenances, and apartments for the resident janitor are provided in suitable places.

The following are some of its characteristics:

(1) The hall block is in the style of Italian renaissance, enriched with carving and sculpture; it is constructed entirely of Portland stone, except the columns of the windows, which are polished red granite shafts; it seems intended to be as good a specimen of æsthetic architecture as the art of the country could produce.

The exterior of the teaching block which faces a side street leading back from the embankment is of very plain character architecturally, being of faced white brick, with stone strings, cornices, and window dressings.

(2) Fire proofing. The whole of the floors throughout, except those in janitors' bed rooms in the roof, are fire proof, consisting of Portland cement concrete, filled in between rolled iron joists; the lintels throughout are made up of rolled iron joists.

(3) The staircases, as to the number, liberal size, and arrangement. The state staircase leading to the grand hall is monumental, containing niches for statues and marble memorial tablets in the wall panels on either side.

(4) Provision for heating, which is varied to suit the requirements of the different parts of the building. Each school room is heated entirely by Boyd's open fireplace, having a warm air chamber at the back of the stove (fireplace). This warm air chamber has one opening into the outer air and another opening into the room, over the top of the fireplace. The fireplace is in the corner of the room at the righthand end of the master's platform.

The administration rooms and the dining room are also warmed by open fireplaces; the other parts of the building are warmed by coils of hot water pipe.

(5) The school rooms are nearly square, being 24 by 22 and 14 feet and 6 inches high, giving about 200 cubic feet of space per boy; they were planned on the assumption that forty is the maximum number of boys to be accommodated in each; each school room is lighted entirely by a large window on the lefthand side of the pupils, this window being four lights wide, with dividing mullions and a transom. The top lights

above the transom are hung on centres, with Elsley's patent balanced levers for opening and closing the same. In respect to size, shape, and lighting, this school room cannot be considered as equal to those of the Vienna and Boston buildings. The Boston top lights are hung at the base, which is a better plan than the centre hanging.

(6) The admirable grouping of the rooms for the science department of the school, on the upper or third floor, in connection with the lecture hall, which is treated in an admirable manner, both architecturally and pedagogically.

(7) Provisions for dining and lunching the pupils, comprising a kitchen with all its appurtenances in the third story, and a dining room with its appurtenances in the basement, and a counter for the sale of cakes, buns, ginger beer, and other such delicacies for the benefit of the boys who do not take the school dinner.

(8) Two drawing school rooms ingeniously located and having extra high windows.

(9) The great hall, 100 feet by 45, with a handsome open timbered roof 60 feet high to the ceiling, to be used for an assembly of the whole school for prayer each morning. This hall contains sittings for about a thousand persons, and is regarded as the finest hall in the realm, with the possible exception of Whitehall.

(10) School desks. The pupils are seated at dual desks.

(11) Blackboard provision. A large movable, sliding blackboard at the end of the room behind the master.

(12) The corridor of the teaching block extends through the whole length of the first and second floors between the rows of school rooms, and is 3 feet less in height than the school rooms.

(13) Ventilation. Above each corridor is a horizontal foul air passage 3 feet high, connected at one end with a tall upcast shaft from furnace in basement; each school room has two openings close to the ceiling into one of these horizontal foul air passages.

(14) Sliding partitions. Three pairs of adjoining school rooms are separated by sliding partitions.

(15) The liberal size of the open air playground.

(16) The superior covered playground, occupying the whole basement of the hall block and the whole extent of the back side of the teaching block basement, with no masonry obstructions.

(17) Gymnasium. This is a detached building, 75 by 35, 20 feet high to beam, having an open timbered roof, with lantern light extending the entire length of the ridge.

(18) Fives courts, six in number, two being covered in with glass for use in wet weather.

(19) Boys' entrance and cloak room, on the playground level, 48 by 34, having eight doors opening to the street, playground, staircases, and lavatories; warmed by coils of hot water pipes beneath the floor,

provided with gas for dark days in winter, and containing racks with 680 wrought iron hat and coat pegs, each with its own number.

(20) Science master's private laboratory for the preparation of illustrative experiments and apparatus, connected with the lecture hall and apparatus room and also with the class chemistry room, the latter being provided with working benches for a class of thirty boys and furnished with every desirable requisite.

(21) Water closets and urinals. In a separate building most perfect in all arrangements and connected with the main building by a passageway.

(22) Sanitary arrangements and drainage are unsurpassed in scientific and mechanical construction.

These extended notices of the London and Boston buildings are appropriately placed here in juxtaposition as being the most conspicuous examples of the most advanced theories of school-house building to be found in the English speaking world.

WASHINGTON HIGH SCHOOL.

It is to be regretted that the high school-house recently erected in our National Capital should be in its planning so far behind the times. Its conspicuous absence of merit was not to have been anticipated, considering the high reputation which the city had acquired for school-house building in the erection of the Franklin and so many other good school buildings. The architecture of the exterior of this edifice seems to have been designed as a contrast to the ornate grandeur of the Government palaces. The ground plan is a simple, long parallelogram. It is three stories high and faced with red brick. It is without ornamentation of any description. The first and second floors are alike in plan. A wide corridor in the middle extends the whole length of the building; on either side of this corridor there are four school rooms and a room large enough to be called a hall. On the third floor there are four school rooms, two small halls or drawing rooms, and a large hall extending across one end. Besides the rooms mentioned there are no other apartments for any purpose whatever, above the basement. The school rooms are not patterned after the best model. The water closets are in the basement. The heating is effected by means of direct steam radiation.¹

REQUIREMENTS OF THE MODEL SCHOOL ROOM.

(1) Shape. It should be oblong, the width being to the length about as three to four, with the teacher's platform at one end.

(2) Size. For primary or grammar school, with register of 54 pupils and attendance of about 50, the room should be about 33 feet long, 25 wide, and 13 high, which gives practically upwards of 200 cubic feet and 16½ square feet of floor space to each pupil.

¹ It is understood that this building was not planned in accordance with the views of the board of education and superintendent.

(3) Lighting. Four windows on the left of the pupils as they sit, the tops being square and not more than six inches from the ceiling, the bottoms being at least three and a half feet from the floor, equally spaced, not grouped, with transom sashes hung at the base, above the sliding sashes. A window or two in addition at the back is admissible. The size of the windows on the side taken collectively should equal at least one-sixth of the floor space. The highest authorities in school hygiene require 300 or 350 square inches of glass for each pupil.

(4) On the side opposite the windows, two doors with transom windows above, hung at the base, and between these transom windows and on the same line two more windows of the same kind and hung in the same manner.

(5) The wall should be slightly tinted, but not the ceiling.

(6) A blackboard may be between the doors, but a sliding blackboard, back of the teachers' platform, or a portable one on the platform, in accordance with the German idea, would perhaps be better than the profusion of wall blackboard now in vogue among us.

(7) Location of seats. The main rule to be observed in the placing of the seats is to carry them as far as possible towards the window side of the room and as far as possible from the opposite side; the aim being to make the arrangement such that the distance of the outer row of desks from the windows shall not exceed once and a half the height of the top of the window from the floor.

(8) Clothes rooms. There are three kinds of depositories for the pupils' clothes, all of which are more or less in vogue, namely: (1) one room for the whole school or several classes; (2) a room attached to each school room; (3) arrangements within each school room, either wardrobes or racks or pegs on the wall. The second kind is most prevalent and is thought by some to be indispensable; it has important advantages, but its use by both sexes is objectionable; it is difficult for the teacher to maintain supervision over it; it is an important item in the cost of building, and proper provision for it is a difficult obstacle to overcome in planning large buildings: hence, in some cases, as in that of the London school, the large common room is preferable, and provision within the room, as above mentioned, is perhaps to be preferred to the small clothes room, where the number of scholars accommodated in a room is not large. In the Boston school, above described, the third kind is provided, as is the case in the Vienna and other first class European schools.

GENERAL REQUIREMENTS OF SCHOOL-HOUSES.

(1) Height. A school-house should never exceed three stories in height above the basement. The school rooms, as a rule, should not be placed higher than the second story; the assembly hall should be on the upper floor, and so should the rooms for drawing.

(2) Size. A building large enough to accommodate eight hundred pupils should be regarded as the maximum for a school of any grade, whether primary, grammar, or high. For a grammar school, the scholars being from eight or nine to fourteen years of age, the model building should not be designed to accommodate more than five hundred pupils; for a mixed high school the number to be provided for ought to be even less than the normal number for a grammar school. In regard to the size of the primary school-house, it would not be far from the mark to say the smaller the number of pupils it accommodates the better for the pupils, provided the number brought together is large enough to admit of a classification which does not require more than two classes in a room. Small schools are not the cheapest, but if the best results are aimed at, and not the minimum expense, the number of pupils should not exceed that required for a fair classification. The mammoth school must, from the nature of things, be a second rate school.

(3) School furniture. The day of hacked desks is gone. It is now well known that nicely made and well polished desks are easily preserved, free from injury, for many years, even in boys' schools. It is rare to find in our American schools the foot rest, which is regarded by eminent foreign authorities as highly important.

The two modes of seating found in most cities are that of the combination furniture and that with a separate chair. In the former each desk has a seat attached in front; thus the front of each desk serves as the back of a seat. This is the kind of furniture, in its various patterns, which is, perhaps, most extensively used. The desks are mostly double—that is, for two pupils. The other type of furniture differs from the combined by having the chair separate from the desk. The most approved variety of this type has the chair mounted on a single cylindrical iron support. The tendency is to substitute the single for the double desk. It is supposed by some that the single desk requires too much floor space for general introduction, but if the desks are not made unnecessarily large, and if they are placed as near together as convenience will permit, they will require no more space than ought to be allowed, whatever may be the mode of seating. The single desk with the separate chair must be regarded as the best mode of seating. It is desirable, of course, that the height of the chair and desk should be accurately proportioned to each other and to the size of the pupils for whom they are intended. But it is extremely difficult to realize the ideal perfection of this adaptation. There should be at least three sizes of desks and chairs in each room of a graded school. The number of each size can be determined only by experience. There should be at least six sizes to suit all the grades of an elementary school comprising both the primary and grammar grades. The chair should be so placed that the front edge of the seat shall be in the same vertical line with the edge of the desk lid. Our school furniture is, in general, far superior to that of foreign countries in respect to material, design,

and workmanship. Its defect consists in the want of a perfectly scientific adaptation of its proportions to the anatomy of the juvenile frame.

(4) The ground plan. If the building is of considerable size the ground plan should not be in the form of a square, parallelogram, or cross. It should be in L form or it should be built on three or four sides of a rectangle; if very large it should have a number of interior courts thus inclosed, after the manner of the Collège Chaptal in Paris, which has five open interior courts; and the ground plan should be nowhere wider than the width of a school room and the width of the corridor added. The corridor should, as a rule, open on one side into the outer air. The school-house planned after this idea is so far a new departure as to constitute a new type, which we may denominate a *court type* or *court plan*. It has already been referred to in connection with the Boston high school block. It is illustrated in the plan of the Prince Grammar School in Boston, which was commenced in 1876 and completed several years later. This type will, I doubt not, ultimately supersede the type which originated in the Quincy School. My reason for this opinion is that it has been adopted in those countries where school architecture has been most thoroughly studied and where the best specimens of school buildings are to be found.

(5) Fire proofing. Only a beginning has been made in this direction. In buildings of more than one story in height this important safeguard ought not to be omitted.

(6) Ventilation. In the building of the court type, having transom windows, as above described, and heating by means of indirect radiation, successful ventilation is easily attained.

(7) Orientating. Wherever practicable the ground plan should be so orientated that the corners of the structure shall point to the cardinal points, thus bringing the sides which receive light to face the southeast and northwest and northeast and southwest. This position insures the admission of the sun's rays in every window at some time of the day. In particular, great pains should be taken to prevent if possible the facing of unilaterally lighted rooms to the south.

The space devoted to a school should be twice as large as the house, including all contemplated future enlargements, will actually cover. Even this amount of spare land is hardly enough for a playground, but it will at least suffice to meet the urgent demand for free space about a school-house. A belt of 30 feet on all sides that are liable to be overshadowed is the least that should be given in order to secure proper lighting and a free play of air. * * * As regards the amount of playground required, the Germans have estimated it at least three metres for each child, which would give nearly 20,000 feet for a school of 600 pupils.—(Report on hygienic requirements of school architecture, by Dr. D. F. Lincoln.)

The great high school of Omaha is placed in the centre of a square park of sixteen acres which is so elevated as to command a view of the whole of this more than seven hilled city of magnificent distances.

The high school of Denver has a lot large enough to deserve the name of park. But the city of London probably affords the most remarkable example of liberality in providing air space and playground for common schools.

(8) Gymnasium. Every city school-house of any considerable size should have its gymnasium, which may be in the main building or in a separate building. It need not be very large; once and one-half the size of a school room might perhaps be taken as the minimum size. Perhaps none of our city schools has been more satisfactorily provided with gymnastic accommodation than the Hartford high school, which for more than thirty years has enjoyed the advantages of a good gymnasium with all the needed appurtenances and apparatus.

(9) Water closets. If in a detached building, this building should be connected with the school-house by a covered passage. If they are in the basement, arrangements should be made for daily flushing. I have known the plan of dry earth closets in the basement to be tried in several instances with bad results and the flushing plan with good results. In Vienna I visited an elementary school where each school room had its urinal, which was kept in excellent condition.

(10) Entries and corridors must be spacious relatively to the stairs, especially at the foot of the latter. In large houses a width of ten or twelve feet is required. They should be lighted directly from out of doors when possible and the lights should be placed at opposite ends (end lighting not important in buildings of the court type), so as to insure a free, natural ventilation, which on many days of the year, even in winter, is the best for entries. It is hard to ventilate entries that occupy the centre of schools. Of this the Boston girls' high school offers an instance. The doors of the rooms stand open in study time, so that the whole house gets an equable foul atmosphere at about 70° to 74°, and when recess comes the girls, in large groups, stroll about these hot entries unvisited by a breath of fresh air.

(11) Stairs and stairways. Of these Dr. D. F. Lincoln, in his report on school architecture, says:

They should be fire proof, by which I mean that they should, if possible, be isolated by solid brick walls on at least three sides. Like the entries, they must be lighted from the outside. There must be at least two staircases for a building of the size contemplated here, and some architects will consider three necessary. The width must be at least six feet in the upper story and eight in the lower, and regard must be had that the height of the steps is not too great for children. Spiral stairs are inadmissible, for the steps are very narrow next the well, and if the child falls the descent is very steep at that point. Wedge shaped stairs are inadmissible, for the same reason, in turning a corner; they are common in private houses, but dangerous when crowded. Wells are undesirable on this account, although they have a certain advantage in ventilating the entries. If they are used the staircases are to be sheathed. Balusters are totally unnecessary. The rail should be about four feet above the riser. A staircase which ascends the height of a story without a break is not desirable; one or two landings (half-whole landings is the technical term) should be introduced to afford momentary resting place.

(12) Assembly hall. To New York without doubt belongs the credit of having taken the lead in demonstrating the utility and in developing the capabilities of the assembly hall as a feature of our school architecture. From the first it has been considered in New York not a mere luxury, to be dispensed with at pleasure, but a necessity. If not a necessity it is certainly a very desirable feature. The following from the pen of an eminent French educator shows how the use of the hall impressed the mind of a competent foreign judge:

After realizing the true function of the American school, it becomes apparent that a large hall or assembly room, designed for general reunions, is really indispensable in an educational system like that of the United States. Nothing is more beautiful and nothing, I am persuaded, exerts a better influence than these grand reunions of children, brought about with a dignity and soberness of manner natural to the Americans when they form themselves into an assembly. To appreciate their effects it is only necessary to see the children of a large school assemble in the hall. They enter step by step, marching in time, generally to the music of a piano, large and small, by classes, in the most perfect order, without any one, either the largest or the smallest, showing the slightest inclination to laugh, to look lightly upon the ceremony, to affect those forward airs which are too apt to distinguish boys of from fifteen to eighteen years of age among us, to say nothing of girls of the same age. Whether the reunion in the hall lasts five minutes or an hour, whether it is an assembly for prayer, for singing, for examination, or for some other purpose, the attitude of the scholars is the same; and we have nothing in our pedagogical organization which is productive of the same results. It is not only discipline, it is reflection; it is a moment, no matter how short, that leaves its mark on character; it gives unity to the school and moulds the whole of the children into a common life. These children, of different age and sex, are affected by this single and short interview in a wonderful manner, difficult to be described. The youngest among them learn from instinct and from the example of those older than themselves respect, steadiness of character, seriousness of manner, an idea of the greatness of the school, and, I am almost ready to say, of the holiness of the place. The oldest engage in the exercises of the youngest. You will see them mark time, go through the prescribed forms for gaining their places, get up and sit down at a given signal, perform conscientiously and without smiling the various gymnastic and calisthenic movements, and defile in a military way in front of the platform, young gentlemen and young ladies, with an air at once serious and good humored. Then there comes a beautiful piece of sacred music, a national hymn, or a school song. The moral effect of all this is immense; it unites all these young hearts in a common love of country, which is a very important matter in the political and moral education of the future citizens of the United States.

It is on this account that it is nowhere a question as to the propriety of these grand assembly rooms in large school buildings, although strangers, seeing them nearly always empty, are tempted to consider them useless.

SOME PECULIAR CHARACTERISTICS OF FOREIGN SCHOOL-HOUSES.

(1) The fireplace in the school room. This feature is, perhaps, peculiar to England.

(2) A feature of the French city school-house is the *préau couvert* (covered playground), which generally consists of a good sized but not high studded hall on the lower floor. Here the scholars, on coming to school in the morning, deposit their lunch baskets, head coverings, and outer garments. It is furnished with movable benches. Here the

pupils pass the recess in inclement weather, under the surveillance of teachers, and here those who do not go home pass the intermission between the sessions.

(3) The schools in Germany and Austria are usually provided with gymnasiums, either in the school buildings or in detached buildings.

(4) The school-house on the continent, as a rule, comprises apartments for the dwelling of the principal.

(5) It is universally the custom in Europe to provide apartments for the dwelling of a janitor in school-houses large enough to require the services of such an employé.

(6) All the school-houses I visited in Vienna had stone stairs, and I believe this is a feature of all the school-houses in that city.

SCHOOL MUSEUMS.

Agassiz, in his efforts for the promotion of instruction in natural history, was accustomed to reiterate the saying "I hope the time will come when every primary school will have its little museum of natural history." But some time before the great naturalist coined this happy saying the same idea, in a more comprehensive sense, was already embodied in our pedagogical literature.

In 1832, Mr. A. Bronson Alcott wrote:

To do full justice to the young mind, our school rooms should become museums, imaging forth the variety and beauty of the material and mental world. By such arrangement juvenile interests would be secured, curiosity and inquiry incited, and intellectual attainment and vigor result. The child would feel himself in the presence of objects analogous to the outward sphere, and imbibe the inspiring influence.—(Proceedings of American Institute of Instruction, Vol. II, page 142.)

There we find the idea of the school museum presented in its widest scope; it is not limited to any department of knowledge, but comprises not only specimens of natural history, but productions of art, illustrations of materials in process of manufacture, specimen products of agriculture, miniature implements of all sorts, models and pictures of historic monuments, portraits, coins, &c. The school museum, in this broad sense, is the necessary concomitant of the intuitive method of teaching. Accordingly, where the latter has gained a foothold, we find the idea of the school museum more or less developed. Incipient school museums are now to be found in individual schools of different grades in all sections of the country. In the better class of primary schools it is not uncommon to find a modest cabinet filled with specimens of natural history and sundry miscellaneous curiosities, collected by the enterprising teacher with the assistance of her pupils. Along the seashore shells are apt to form the largest part of the collection; in other localities minerals are most conspicuous. Not a few high schools possess collections of considerable value, especially in the department of natural history.

In grammar schools less progress seems to have been made in this

direction than in the grades above and below. There are now in the market excellent sets of minerals, systematically arranged and labelled, especially adapted for use in these schools. In one of the fine common schools of Vienna I saw installed in a good sized room a beautiful museum of technology and of natural history. Each school in the city was allowed from the public treasury a certain sum annually to be expended for its museum at the discretion of the master. As yet no provision of this sort appears to have been made in our city systems to encourage and aid the teachers in this line of progress. It is especially desirable that the grammar schools should be provided with a technological museum, more or less extensive. The nature of such a museum is described in connection with the account of the Tournefort school at Paris. In providing a school with a museum, it is the first step that is the difficult one. A beginning once made and a place of instalment secured, the collection is sure to grow in size and interest and usefulness.

DECORATION OF SCHOOL ROOMS AND ART FOR SCHOOLS.

Closely allied in purpose and utility with the idea of the school museum is the idea of the decoration of the school room. This idea is rapidly becoming general. City school rooms totally destitute of objects intended for decoration are perhaps exceptional. We find almost everywhere that the most naked and unadorned have at least a plant in the window, a picture on the wall, or a decorative drawing on the blackboard. The profusion of plants in some primary school rooms gives them the air of a conservatory. In visiting the schools of Pittsburgh several years ago I was greatly charmed with the taste everywhere displayed by the teachers in the decoration of their school rooms with plants and flowers.

Nearly twenty years ago New York set an example in the decoration of school halls with numerous busts and engravings. Subsequently a committee was appointed by the educational department of the Social Science Association to consider and report on the subject of the decoration of school rooms, with a view of introducing an æsthetic element into the educational system of the United States. The immediate result of this movement was the decoration of the hall of the girls' high school-house in Boston, which was then building, with a selection of casts from antique sculpture and statuary. The expense of the purchase, transportation, and placing of the casts was met by the subscriptions of a few members of the association, with the aid of some persons not members, on condition that the hall should be finished at the expense of the city with special reference to the plan of decoration which had been decided upon. For a series of slabs from the frieze of the Parthenon an architrave was constructed resting on Doric pilasters. Between these pilasters the walls were painted of a color suitable as a background and brackets or pedestals of proper form were provided for the busts and statues. Casts, if selected to express the highest laws

of form and the purest types of beauty, could hardly fail to produce a favorable effect upon the mental and moral training of the young, especially if associated with their studies; that is, their daily efforts to improve themselves. The collection was not made for a single school or for a single city, but for every school and every town or village where a similar attempt to extend the culture and beautify the environments of our educational system is possible. (For a descriptive list of the casts, the place of purchase, and a statement of the cost of each, see Appendix E, page 206.) The theory of æsthetic culture in schools, upon which this plan of decoration was based, is essentially the same as that propounded and so ably advocated by M. Ravaisson, of France, under whose direction a series of magnificent phototypes of antique sculpture and statuary have been prepared for the decoration of schools.

If the school room is adorned with works of art the pupils' ideas are associated with things of beauty as well as utility. Ruskin, in speaking of the decoration of the school room with busts and paintings, says:

How can we sufficiently estimate the effect on the noble mind of a youth, at the time when the world opens to him, of having faithful and touching representations put before him of the acts and presences of great men; how many resolutions which might alter and exalt the whole course of his after life, when in some dreamy twilight he met through his own tears the fixed eyes of those shadows of the great dead, unescapable and calm, piercing to his soul, or fancied that their lips moved in dread reproof or soundless exhortation.

Falling upon this fine passage of Ruskin, at once so poetic in conception and so sound in doctrine, I was naturally reminded of a striking example of the realization of the idea it recommends—the most striking example perhaps which has come under my observation—namely, the decoration of a remarkable Jesuit school of the highest order, which I visited some years ago in the city of Paris. Everywhere in this great establishment, which is shut in from the outside world by high walls even more effectually than Girard College, were decorative representations in sculpture, paintings, engravings, and sun pictures of men and deeds, calculated to inspire the pupils with the spirit of the institution and stimulate them to the utmost efforts for the attainment of the objects which it proposes. It is perhaps scarcely necessary to say that this example is rendered especially important by the fact of the well known success of the Jesuit schools in determining the character of their pupils.

It is remarkable that in the country where such an example was found in a private establishment and in a country so eminent for its cultivation of art in all its departments almost nothing had then been done through the agency of the common schools to promote by the indirect means under consideration the moral and æsthetic culture of the masses of the people. Since that time, however, a very important movement has been made on this line of improvement. At the suggestion of M. Buisson, director of primary education, the minister of public instruc-

tion appointed a commission on the decoration of schools and art for schools,¹ consisting of thirty eminent men. This commission was charged, in general, with the duty of studying the means of introducing into the system of instruction in all its grades the æsthetic education of the eye. The results of the labors of the commission, which were extended over the period of nearly a whole year, were summed up in a remarkable report to the minister by Charles Bigot.²

This report begins by presenting in a felicitous and forcible manner the argument in favor of combining in education the cultivation of the sentiment of the beautiful with the sentiment of the true and the sentiment of the good, maintaining that nothing great has been done on the earth except by the effect of one of these three sentiments, each having its apostles, its heroes, its martyrs. "A grateful posterity places equally in its Pantheon, and honors with a pious worship, scholars, artists, saints, these glorious examples of humanity."

The cultivation of the sentiment of the beautiful by means of poetry and poetic and artistic literature was never wanting in the schools of the higher grade. More recently provision had been made for extending culture in this direction by the general introduction of instruction in music and drawing. The especial task of this commission was to devise ways and means for improving, as far as practicable, æsthetic education through the eye, not by specific, direct instruction set forth in programs, but by the operation of the environments of the school and the artistic character of its appliances. These environments and appliances were considered by the commission mainly under four heads: (1) The æsthetic character of the school building, including its artistic ornamentation, both exterior and interior; (2) the furnishing of objects of art for the observation and study of the pupils, such collection of objects belonging neither to the appliances nor to the architectural decoration, constituting the school museum of art; (3) the rewards of merit and prizes; (4) illustrative apparatus, and particularly the department of transparencies. Here it was deemed that scientific accuracy alone was not sufficient, but must be accompanied with elegance of form and harmony of color, so far as the nature of the object would permit. This commission examined and reported upon the propositions and objects submitted by publishers and artists, comprised under the four categories above enumerated.

The essential outcome of the labors of this large and very able commission, besides the valuable contribution to pedagogy comprised in the observations and discussions of their report, was the institution by the minister of a permanent commission for the promotion and perfecting of this department of public instruction.

¹ Commission de la décoration des écoles et de l'imagerie scolaire; appointed June, 1880.

² Presented April 11, 1881; printed in the *Manuel général de l'instruction primaire*, July 23, 1881.

This interesting movement of the educational administration of France has attracted the attention of educators on the other side of the Channel. Some time ago a committee was appointed in Manchester, England, "to remedy the deficiency of English school arrangements in the means of awakening a sense of beauty and an interest in art."

The functions assigned to this committee, which are similar to those of the standing French commission, are as follows:

(1) To negotiate with art publishers for the purchase of prints, photographs, etchings, chromolithographs, &c., on advantageous terms, and to supply them at the lowest possible price to schools.

(2) To reproduce from time to time, by one or more of the processes familiar to engravers and printers, carefully selected examples likely to have a large circulation.

(3) To print a descriptive catalogue and price list of the examples which the committee are prepared to recommend to the notice of schools.

(4) To present to schools, in special cases and as the funds of the association shall allow, small collections and books explanatory of them.

(5) To arrange various loan collections, to be placed at the disposal of schools on such terms as may prove convenient.

(6) To bring together a number of examples to be exhibited in a suitable place as a tentative model of a standard collection, the collection to consist of (a) pictures of the simplest natural objects, birds and their nests and eggs, trees, wild flowers, and scenes of rural life, such as town children seldom see and country children often fail to enjoy consciously until their attention is specially called to them; (b) pictures of animals in friendly relation with human beings, especially with children; (c) pictures of the peasant and artisan life of our own and foreign countries, incidents of heroic adventure, &c.; (d) pictures of architectural works of historic or artistic interest; (e) landscapes and sea pieces; (f) historical portraits; (g) scenes from history; (h) and last, but by no means least, such reproductions as are available of suitable subjects among the numerous works of the Italian, Dutch, and modern schools.

More recently an association has been organized in London, with Ruskin as president, with a similar object in view, namely, "to bring within the reach of boys and girls in our board and other schools such a measure of art culture as is compatible with their age and studies."

The committee on drawing of the Boston school board (Mr. C. C. Perkins, chairman), in their report for 1883, called attention to these movements in Manchester and London and suggested the desirableness of organizing for the same purpose an "art for schools association" in that community. In this connection the committee remark:

We hold, with the English committee, that "a love for the beautiful is, perhaps, only second to religion as a protection against the grosser forms of self indulgence, and that it can best be kindled at an age when the mind is especially susceptible to the influence of habitual surroundings;" and on these grounds we look for the sympathy, although we cannot ask the coöperation, of the board in our proposed effort to found an art for schools association in Boston; and this, not only because the decoration of school-house walls with good prints and photographs will bring good influences to bear upon the pupils, but also because these will materially aid teachers of history, geography, and natural history as objects of reference. The decoration of the exhibition hall of the girls' high school with casts and the prints hung up in certain grammar and primary school class rooms show that the masters and teachers are, in many cases, alive to the importance of the subject and ready to aid in any well organized effort to promote its further development.

The committee might have appropriately referred in this connection to more recent and not unimportant contributions of works of art to the schools under their charge, the most valuable of which decorate the main vestibules of the new school-houses of the Latin and English high schools. In the latter a beautiful group in marble, the subject being "Flight from Pompeii," has been placed by one of the earliest graduates of the schools (Mr. Henry P. Kidder). In the Latin School vestibule stands a fine marble statue by Mr. Richard S. Greenough, a Latin School boy, which was procured by the graduates of the school to honor those who had honored her, and especially to commemorate those who had fallen in defending their country. This statue represents the alma mater of the school resting on a shield which bears the names of the dead heroes and extending a laurel crown to those who returned from the war.

PEDAGOGICAL LIBRARIES.

Pedagogy is used to designate that province of knowledge which comprises the philosophy, science, art, and history of education. The cultivation of this knowledge is a necessary means of educational progress. Pedagogy teaches how to design school-houses, how to determine the subjects of instruction and arrange them in rational and harmonious programs, how to impart instruction, how to govern so as to produce self-control, how to train and to develop the faculties harmoniously, and how to superintend and administer educational institutions and systems. It analyzes and unfolds the intellectual, moral, and physical nature of the being to be educated. It treats of education in its social, political, and economical relations. It ascends into the region of speculation and investigates the theories touching the destiny and the true ends and aims of man. It gathers up the history of the experience of the race on the subject of education for the guidance of present and future generations, thus furnishing the means of obtaining a knowledge of the best things that have been said, thought, or done for the promotion of human culture.

Advancement in education and the cultivation of pedagogy must go hand in hand. As a rule, teachers and directors of education are successful in proportion to the degree of their mastery of the knowledge of their profession; that is, their knowledge of the best things that have been said, thought, or done touching the business in hand. The acquirement of this knowledge comes mainly from the study of pedagogy. From the want of adequate pedagogical knowledge on the part of school boards, superintendents, and instructors, the nation is wasting yearly millions of money and the teaching force of teachers and the learning force of learners in amounts incomputable and inconceivable. Hence, in my view, too much cannot be done to promote pedagogical study. The normal schools are the natural centres of this study. It is one of their leading functions, if not the principal one, to

initiate their pupils into it, to give them good guidance in it, and to inspire them with zeal in its pursuit. It must be owned, however, that up to the present time this essential function has been too much neglected, and to this neglect may, I think, fairly be attributed the general neglect of this study among teachers and educational officials. The fact of neglect is proven by the non-publication and non-sale of educational works. Publishers are prudently reluctant to issue pedagogical books, because they know the meagre demand for them.

The unique thing in American pedagogy, Dr. Henry Barnard's *American Journal of Education*, which was begun thirty years ago and now comprises thirty imperial volumes, has kept its self sacrificing editor and publisher on the brink of bankruptcy for lack of buyers. Of this great publication M. Buisson thus speaks in his *Dictionary of Pedagogy*:

No writer during the past half century has brought together, so far as we know, such a vast mass of materials, of information, and of studies of every kind belonging to pedagogy as has Dr. Barnard. His writings, his official reports, those works he has translated or summarized, the innumerable works he has succeeded in securing, classifying, and editing, form a true pedagogical encyclopædia, and are all the more remarkable because all countries and all times are there represented.

In the new edition of the *Encyclopædia Britannica*, in the article "Education," by Oscar Browning, we have this estimate of the work:

In English, though we have no investigators of the history of education, we have a fairly large literature on the subject, but it belongs almost exclusively to the United States. The great work of Henry Barnard, the *American Journal of Education*, in twenty-five volumes, has valuable papers on almost every part of our subject, many of them translated from the German; but there are also original papers on our old English educational writers and extracts from their works. This is by far the most valuable work in our language on the history of education.

This work, the admiration of the international juries at the universal Expositions at Vienna and Paris, was by both crowned with the highest honor, and yet it finds only here and there a solitary buyer. It is not even in the libraries of the normal schools, with some honorable exceptions. Few are the public libraries that can boast of the possession of a complete set. Very few are the superintendents of schools who can point to it on the shelves of their office libraries. How few are the school libraries in which it is found! How few are the teachers, even of the highest grade, whose private libraries are enriched by this educational treasure! The great bulk of teachers have never seen a copy of it and probably never heard of it. In view of these facts, is it not just to say that this publication is at once our pedagogical glory and our pedagogical shame?

One of the regrettable and pernicious results of this general neglect to cultivate the study of pedagogy is found in the dense and profound ignorance of the subject displayed in so many essays and editorials on educational topics in our newspaper and periodical publications by amateurs and laymen, who presume to instruct the public in what they themselves have not as yet begun to learn. Here we find a good illus-

tration of the truth of the observation of M. Michel Bréal in his excellent little book entitled *Quelques mots sur l'instruction publique en France*. This eminent savant and pedagogue says:

It happens, when a science is not regularly cultivated in a country and has not its authoritative writers or its special public, that everybody thinks he has a right to give his opinion on the matter. It is never with impunity that men devoted to a specialty abandon a nook or corner of the domain of thought: the ignorant crowd precipitate themselves upon the spot and charlatans take possession of it to display there their gimcracks.

Educational history is the only sure antidote to educational charlatanism. Enlightened friends of educational progress, therefore, cannot but regard with peculiar interest such movements and provisions as have for their object to aid and encourage pedagogical study. The most practical means for this end is the multiplication of libraries of sound educational books. It is believed that we are entering, that we have indeed already entered upon a new era in this respect. A demand for educational books is beginning to spring up. I hear that a great publishing house has undertaken to issue an educational library. Some recent sound English publications have met with considerable sale. Nuclei of pedagogical libraries are beginning to be formed. Superintendents are beginning to make collections for their offices. Small collections are being made for individual schools, while individual teachers of the more enterprising class are beginning collections of books relating to their profession. As this movement gains strength, authors and publishers will be encouraged to produce and put such books on the market, and in time we may hope to have enterprising dealers wholly devoted to the purchase and sale of pedagogical books.

In the office of the board of education of the city of Milwaukee I found, in 1852, a valuable pedagogical library which had been collected by the efforts of the then superintendent, Mr. James MacAlister. This is the best collection of educational books that I remember to have seen in the possession of any school board. It is desirable that there should be a similar collection in the office of every superintendent of city schools and *Barnard's Journal* should constitute a part of it. For this purpose the board should set apart annually the necessary funds for the purchase of the books. Then there should be a modest but choice selection in every considerable public school, for the handy use of teachers. In Vienna, every school is allowed annually a considerable sum for the purchase of books, pedagogical and general.

In France, besides the great national pedagogical library and museum established in Paris in 1878, there are already scattered over the country more than a thousand local pedagogical libraries. In some of the departments at least one such library is found in nearly every canton. A commission has been appointed by the minister of public instruction to make a selection of foreign pedagogical literature for translation into the French with a view to publication.

An extensive and exceedingly valuable collection of educational literature, not only in English, but in other languages, has been gathered at the National Bureau of Education, as an indispensable part of its equipment. Here the student of pedagogy can find the needed facilities for research in all the branches of the science. Between this great central library and the local libraries above referred to there should be a full collection of standard educational works and official reports, forming a department of every State library or forming a separate establishment under the direction of the State educational authorities. And, besides these special libraries, every public library, whether large or small, should contain a copy of Barnard's American Journal of Education, with the current issues of educational books in the English tongue; and, in addition, the larger libraries ought to contain the current issues of educational works in other languages, especially in the German and French.

PROVISIONS FOR COERCIVE SCHOOL ATTENDANCE.

The two essential elements of a system of universal popular education are (1) public provision for the support of schools for the education of all youth and (2) the instruction of all children in such schools or by other means.

To secure universal education it is not enough to provide schools at public expense: care must be taken that all children are taught in these schools or elsewhere. It is a remarkable fact that both of these fundamental principles were adopted and embodied in legislative enactments by the first settlers on the shores of New England. The provision for universal compulsory education (act of 1642) antedates by five years the law requiring the establishment and support of public schools. The compulsory act provided for the exclusion of "barbarism" from every family by enjoining upon the municipal authorities the duty of seeing that *every child* within their respective jurisdictions should be educated, and bred up in some honest, lawful calling, by his parent or guardian. How long this compulsory provision continued to operate effectively it is not, perhaps, easy to determine.

In the modern revival of education the first efforts put forth by the friends of the cause were directed mainly to the improvement of the means of instruction, in supplying better school-houses, better teachers, better text books, and better methods of instruction and management. As progress was made in this direction it began to appear that many children could not or would not avail themselves of the benefits and privileges which had been so liberally provided for them at the public expense. Horace Mann, in one of his masterly reports of forty years ago, says:

Among our most patriotic and philanthropic citizens, the inquiry is becoming more and more frequent, whether a right to rear up children in a state of ignorance, with all its consequent degradation and dangers, is one of the inalienable rights of a republican?

Thus the question of compulsory education was again posed, but practical compulsion has made but slow progress. We find that, at present, after four decades of discussion and effort, compulsion in any form, either direct or indirect, has been authoritatively recognized as desirable in only sixteen of the thirty-eight States, namely, California, Connecticut, Illinois, Kansas, Maine, Massachusetts, Michigan, Nevada, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Wisconsin.

In general the statutory provisions in these States for direct compulsion consist in requiring persons having the care and control of children from eight to fourteen years of age to send them to school for a period varying from twelve to twenty weeks, under penalty for each neglect of a fine of from \$10 to \$20. In most cases the provision for direct compulsion is accompanied by another for indirect compulsion, forbidding the employment of children in any manufacturing, mechanical, or mercantile establishment who have not attended school during the preceding twelve months from twelve to twenty weeks. In Pennsylvania and Rhode Island there is provision for indirect compulsion only. The provision for indirect compulsion is, on the whole, the most stringent in the State of New Hampshire. The statute is as follows:

No child under sixteen years of age may be employed in any manufacturing establishment unless he has attended school at least twelve weeks in the year preceding, and none under said age may be so employed (except in vacations of the school in the district in which he resides), unless he can write legibly and read fluently in readers of the grade usually classed as third readers. Nor may any child under fourteen be so employed unless he has attended school in the district in which he dwelt at least six months, or during the whole time school was kept in that year; penalty for employment except under the conditions prescribed, \$20 for each offence.—(Amendments of 1881, sections 11 and 12, chapter 91, in the general laws of 1878.)

The compulsory laws in most of the States where they exist have as yet been of little practical benefit, owing to the fact that they lack adequate provision for their efficient enforcement. In Massachusetts, besides the compulsory provisions above mentioned, there is a law known as the truant law, enacted in 1850 and subsequently amended and perfected, compelling the attendance of truants and absentees growing up in ignorance and without lawful occupation, and also a statute, enacted in 1866, providing for the education and care of neglected children, by taking them from their parents and placing them in institutions especially provided for them. The original truant law contained a local option provision, and during a number of years it was adopted only by the city of Boston. Here its beneficial effect was so marked that later on it was made obligatory throughout the Commonwealth, the school board of every city and town being required to appoint truant officers to execute the provisions of the act. The results have been highly satisfactory. The truant officers are charged with the duty of executing not only the truant act, but also the other laws for the prevention of illiteracy and the securing to all children compe-

tent elementary education. Seventeen truant officers are now employed in Boston, or one truant officer to 21,343 inhabitants. The incorrigible truants and absentees are sent for one or two years to reformatories or to other institutions specially provided therefor, where, under proper restraint, they are properly instructed and cared for. This system has had a marked effect in improving the attendance throughout all the cities in the State and in clearing the streets of children growing up in ignorance and idleness.

A few years ago the city of New York, under the provision of the compulsory act of 1874, established a truant system which has produced good results although it has come far short of accomplishing all that could be desired, owing to radical defects in some features of the law. Beyond the cities named, there are few, if any, where even an attempt has been made to enforce the laws for compulsory attendance.

Public instruction cannot be considered as having fulfilled its mission until it secures the rudiments of education to every child. To accomplish this object coercion is necessary. No community has ever been known to secure absolutely universal education without the application of the principle of coercion. It is right to make the schools attractive and use all available moral means to secure the attendance of pupils, but these means have never proved wholly adequate: experience has proved the necessity of supplementing them by compulsion. When non-attendance is due to the dereliction of the parent, then the parent must be held responsible by the strong arm of the law; if the child absents himself contrary to the wish and intention of the parent, then the child must be held responsible. All arguments against compulsion have been triumphantly refuted by accomplished facts.

The principle of compulsion has been adopted by nearly every civilized country in the world. In Prussia it was incorporated into the school law as early as 1742; and in all the German states it has been effectually applied during nearly the whole of the present century. The example of Germany has been followed by Denmark, Norway, Sweden, Austria, Greece, Italy, Spain, Portugal, Switzerland, Great Britain, and France. In Belgium and Holland it has thus far been successfully opposed by sectarian influence.

In 1861 Matthew Arnold, in a report to both houses of Parliament on elementary education in several countries on the Continent, said that compulsion in education could never be adopted in either France or England. But his prediction has not proved true: we now see that in both countries compulsory education has become a reality. In the great educational act of Parliament passed in 1870, compulsion was left at the option of the local school boards throughout England and Wales. After some experiments in this direction by a few of the largest cities, compulsion was made obligatory on all school boards, not only in England and Wales, but in Scotland as well. Never was compulsory school attendance more rigidly enforced in any community than it is to-day in

the slums of London and the squalid alleys of Manchester. The chairman of the London school board, in speaking of the results of compulsory measures adopted by that board, says: "The convictions for juvenile crime are now only half what they were in 1870." In France the law making elementary instruction compulsory was passed March 28, 1882; and this is no lame, half-way measure, but a law providing all the necessary machinery for its effective enforcement.

The common objections to compulsory attendance were answered by the superintendent of public instruction of Kansas, in his report for 1873, in the following apt and incisive manner:

(1) "Such a law would create a new crime." I reply, it ought to. To bring up a child in ignorance is a crime, and should be treated as such. (2) "It interferes with the liberty of parents." I reply again, it ought to, when they are incapacitated, by vice or other causes, for the performance of essential duties as parents. (3) "It arrogates new power by the government." So do all the quarantine and hygienic regulations and laws for the abatement of nuisances in the time of pestilence. Now, ignorance is as noxious as the most offensive nuisance and more destructive than bodily contagions. Self protection is a fundamental law of society. (4) "It is un-American and unadapted to our free institutions." To put the question in the most offensive form, it may be asked, "Would you have a policeman drag your children to school?" I answer, "Yes, if it will prevent his dragging them to jail a few years hence."

REPORTS AND STATISTICS.

As a rule, the school authorities of every city publish an annual report on the school system under their charge. The three essential features of this document are the annual report of the president of the school board, or of a committee appointed for the purpose, the report of the superintendent, and the statistical tables. The reports of many cities, and especially of the larger ones, usually comprise a variety of materials besides, relating to the operations and condition of the school system, such as reports of standing and special committees, reports of superintendents of special branches of instruction, reports of principals of high schools, principals of normal schools, information relating to the organization of the system, with lists of school officers and teachers, rolls of honor, catalogues of graduates, rules and regulations, "manuals," courses of study, lists of text books, and so forth. In many cases the document thus issued, which is usually styled the annual report of the school board or school committee, is a good sized volume.

On the other hand, there are cities of considerable size where the annual school report consists of a single document—namely, the annual report of the superintendent—which the board adopts by a formal vote as its own;¹ and in some cases the rules and regulations provide that the report of the superintendent shall be printed and issued as the report of the board. The two great cities of Brooklyn and Chicago are examples of these extreme types of reports. The former contains no

¹ Examples: Lawrence and Worcester, Mass.

report from the board, or any of its committees, but only the report of its principal officers, namely, the superintendent of instruction, the superintendent of buildings, and the financial report of the secretary; while the latter contains the report of the board by its president, and reports of five standing committees in addition to that of the superintendent. The reports of New York and St. Louis represent an intermediate type. These documents contain no reports of standing committees. In these documents the reports of the superintendent are allowed a wider scope, and in both cases they are introduced by comprehensive general reports through their presidents and are supplemented by reports from one or two other officers.

The reports are generally printed in liberal numbers, and are not only freely distributed at home, but are sent gratuitously and postpaid to anyone outside of the municipalities for which they were intended who may make a request for them.

Occasionally a city¹ is found which fails, for a longer or shorter time, to print an annual report; but these exceptions only serve to prove the rule. In Massachusetts the report is required not only to be printed, but to be printed in a prescribed form and style. Following is the text of the statutory provision made in 1859:

The school committee shall annually make a detailed report of the condition of the several public schools, which report shall contain such statements and suggestions in relation to the school as the committee deem necessary or proper to promote the interests thereof. The committee shall cause said report to be printed for the use of the inhabitants in octavo, pamphlet form, of the size of the annual reports of the board of education, and transmit two copies thereof to the secretary of said board on or before the last day of April, and deposit one copy in the office of the clerk of the city or town.

During the twenty years previous every school committee was required by law to make an annual report, which was to be read in open town meeting or printed, at the option of the committee. In speaking of this department of the system, Mr. Mann called it a "fruitful field of wisdom;" and Hon. George S. Boutwell, in his report for 1860 as secretary of the board of education, says:

The largest public duty of a committee, when measured by its influence, is the preparation of the annual report. It is the chief means by which the people of the town can be reached, and it is now made a part of the documentary history of the State.

It is a curious and gratifying fact that the school reports of the cities in all the States are all printed, so far as known to the writer, in uniform octavo size.

Primarily the object of these annual city reports is to give the public, by whom the schools are supported and for whose benefit they are carried on, ample and correct information as to their organization, cost, working, and results; and, secondarily, to communicate to the teachers

¹ Examples: Cleveland, Ohio; Fort Wayne, Ind.; Davenport, Iowa.

and employés the views and wishes of the administrative authorities respecting their aims and work. And there is a third purpose of no small importance served by these reports, namely, the purpose of interchange of educational information and pedagogical opinions and ideas among city school officials.

These reports, taken as a whole, are worthy of high praise. The best part of current American pedagogy is to be found neither in books nor in the educational periodicals, but in these city school reports. Some critics have complained of the deficiency of these publications in respect to originality; but originality is about the last thing that one ought to look for in a school report. The most original are generally of the least worth. The first requisite of a good report is a good statistical statement of the system. It is only by statistics that a useful comparison can be made of a system, either with itself at different periods of its development or with other systems. General statements of opinions as to condition and results go for little unless they come from persons of exceptional competency and reputation; but a statistical exhibit of the provisions for instruction, as compared with the school population and the results in attendance at the various stages of advancement, is an appreciable reality and a reliable basis of comparison if taken in connection with the programs and standards of examination. It is highly desirable that there should be uniformity in statistical exhibits. This has already been greatly promoted through the influence of the Bureau of Education; but it must be owned that a great number of reports still leave much to be desired, both in respect to uniformity and completeness of statistics. By uniformity here I mean conformity to the statistical schedules of the Bureau of Education. A large number of superintendents have adopted the good plan of beginning their reports with a comprehensive summary of logically arranged statistics of the system. It is extremely desirable that the number of scholars in private schools, with the amount of tuition they pay, should be reported. In some States school committees are required to obtain this information. Among the difficult statistical problems remaining to be solved are these two:

- (1) To secure uniformity of school censuses or uniformity in reporting the number of children of schoolage. This item should be considered the starting point of all school statistics. There is considerable divergence of opinion as to what should be taken as the school age. My own opinion is that the school age for the purposes of comparison ought to correspond in its limits to the age assigned to elementary instruction by the preponderance of authority, namely, from six to fourteen years of age. This question ought to be discussed by educators until a general agreement upon it is reached; and then this conclusion should be embodied in legislation as soon as practicable in all the States.

- (2) To establish a basis upon which to compute average membership, that is, the average number belonging to the school. As there is a

great diversity of practice in computing this item, comparisons based on it are of little value; and of no greater value are comparisons of percentages of attendance, since they are obtained by comparing the average daily attendance with the average number belonging. Therefore, when we see 98 or 99 per cent. of attendance reported, we know that this must be either, on the one hand, simply the result of a particular manner of keeping the records, or, on the other, of a pressure equally powerful and harmful brought to bear upon the pupils.

The fundamental statistical items to be considered and set forth as clearly and forcibly as possible are these:

- (1) The schoolable population.
- (2) The number of children of different ages attending public schools, that is, the whole number enrolled, the average membership, and the average daily attendance.
- (3) The number of children of school age receiving instruction in schools other than the public schools and at home.
- (4) The number of schools, school rooms, and teachers of the different categories.
- (5) The total expenditures for public instruction, under three heads, namely, (a) that for permanent improvements, (b) for tuition, (c) for incidentals, with the cost per capita for each and all these three classes of expenditure, based on daily attendance, average membership, and total enrolment, duplicate enrolments not included. In addition to these fundamental items, the more special statements the better. In particular it is desirable that the cost for text books, stationery, and apparatus be clearly stated in every report; the number of pupils who have fairly completed the elementary course, the number entering upon the high school course, the number completing the high school course, normal, &c.; also, the number of pupils in each grade, that is, primary, grammar, and high, and also the number in each class or year of the course, with the average age of the pupils in each year of the course.

These two classes of items will show, not only how the provision for education corresponds with the needs, but also the results obtained; and these are the items most needed in making a useful comparison of city systems. For home comparison, statistics in detail of individual schools, showing attendance, ages of pupils, classification, promotions, graduations, number of pupils to a teacher, &c., are desirable.

In looking over reports we find here and there special excellences in the department of statistics. Why may not all the really useful items be brought together and made general in these reports? When I consider what progress has been made in this matter during the last twenty-five years, I am not without hope that this result will be reached at no distant future.

The St. Louis report took the lead in furnishing an item of importance respecting attendance even yet found in few others, namely, the

number of scholars attending the full year (200 days), 180 to 200 days, 160 to 180 days, 140 to 160 days, 120 to 140 days, 100 to 120 days.

The feature of the statistics of the report of Brooklyn for 1883, both noteworthy and praiseworthy, is the full statement of the ages of pupils. These tables do not give the average age, but the actual number of each age: (1) irrespective of grades; (2) in the three different grades, high, grammar, and primary; (3) in each class and school of these three grades. Such tables are extremely valuable as a means of determining the character and efficiency of the school system.¹

The New York report contains a unique element of statistics, referred to on page 140 under the head of "Examinations of schools," viz, tables showing the results of the personal examinations in all the branches of study by the assistant superintendent. For instance, these tables show the number of classes (sections taught by individual teachers) found to be excellent, good, fair, indifferent, and bad in each branch of instruction. The details respecting individual schools and teachers are not printed, but wisely reserved for the private use of members of the board.

A very common deficiency in the statistics of reports, and one very annoying to the investigator, is a lack of the separation of the sexes in the statements respecting pupils.

Occasionally we find a superintendent's report giving an extremely meagre account of the schools, either in the form of statistics or any other form, the author seeming to regard school statistics with disdain and to imagine it his duty to fill the pages of his report with brilliant discussions of general educational topics. It is quite unnecessary to print large editions of reports of this class.

Aside from the statistics, the most useful and interesting reports are those which keep closest to the business in hand. They are full of information about the system; they indicate the good tendencies and the good results; they point out the defects and weaknesses with distinctness, but without exaggeration; they are judicious and far-sighted in suggesting improvements and remedies for evils; they always keep uppermost and foremost what is best in opinion and practice touching the matters under consideration.

Not a few reports are not only embellished but greatly enriched by views, plans, and descriptions of new and improved school buildings. The Denver report for 1883 contains a very remarkable chapter on school architecture, comprising a history and description of each building, accompanied by views and plans, together with the original cost, and showing the cost of improvements and repairs made on each since its completion; also a statement, in tabular form, of the floor and glass surface and cubical contents (air space) of each house, as provided for each pupil.² In point of completeness this document leaves nothing

¹ It is to be regretted, however, that the statistics of this report, so excellent in general, do not present more distinctly the sex of teachers and pupils.

² Report of superintending architect, Robert S. Roeschlaub.

to be desired. It is often the case that descriptions of school-houses contained in reports are of little value for want of completeness in the details of information.

The annual report issued by the Cincinnati board consists of two parts; part first is the report proper; part second is a handbook for the school year. The issue for the year ending August, 1882, comprises four hundred and twenty-five pages, and may well be regarded as a model for imitation. In clear and logical arrangement, it is unsurpassed; in completeness of information, it is worthy of all praise; in point of typography and paper, it hits the golden mean, avoiding fanciful extravagance on the one hand and meanness on the other; and I must make it a point to note as one of its merits that it contains, not only a table of contents, but a very complete index. The latter is almost universally lacking in many reports otherwise good; and, strange as it may seem, nevertheless it is true that a great proportion of the reports are destitute of even a table of contents. This is certainly nothing less than inexcusable slovenliness. To give a precise idea of the range of matters comprised in the Cincinnati document, the table of contents of the report for 1883 is here inserted:

CONTENTS.

PART FIRST.

Report of the president.	Report of the superintendent of schools.
Report of the clerk.	Superintendent's tables.
Report of the committee on funds and claims.	Report of the committee on building and repairs.
Report of the treasurer of the public library.	Contract establishing union board of high schools.
Report of the librarian of the public library.	Sections of the Ohio school laws applicable to Cincinnati.

PART SECOND.

Officers of the board of education.	Course of study in Gaines High School.
Members of the board of education.	Text books in high schools.
Standing committees of the board of education.	Questions submitted at annual examinations for high schools.
Local trustees.	Questions submitted at annual examinations for intermediate and district schools.
Delegates to union board of high schools.	Course of study in deaf-mute schools.
Standing committees of union board.	Course of study in high schools.
Members of board of managers of public library.	Time table of English schools.
Standing committees of managers of public library.	Time table of German-English schools.
Rules of the board.	Time table of teachers of music.
Regulations of the schools.	Time table of teachers of penmanship.
Regulations of the union board of high schools.	Time table of teachers of drawing.
Regulations of the board of examiners.	Boundaries of districts, location of school-houses, names and residences of teachers.
Course of study in district schools.	Per diem of officers, &c.
Course of study in intermediate schools.	General index.
Course of study in German department.	

The St. Louis report must, on the whole, be regarded as belonging to the same class, although it has no index. This deficiency is in part supplied by a very full table of contents, as the following extract,¹ relating only to the president's report, shows :

Report of the president :

Bonded debt or sinking fund.
 Permanent fund.
 School capital fund.
 General revenue fund.
 Building fund.
 Financial management.
 Examination of books and accounts.
 Janitors' salaries.
 Teachers' salaries.

Report of the president :

Officers' salaries.
 New legislation.
 Sixteenth section.
 Ames bequest.
 Term of office of officials.
 German-English plan.
 Kindergartens.
 Public school library.

It is important that these city reports should be largely circulated among the inhabitants. On this point I speak from observation, having witnessed the beneficial results of this practice. To circulate generally among the inhabitants documents so voluminous as the modern reports above referred to, the expense would, perhaps, be thought too considerable. The objects in view, however, might be substantially accomplished without excessive expenditure by circulating for the reading of the general public those parts of the document especially adapted to the purpose, such as the reports of the president and the superintendent.

¹ Report of 1881, Mr. Frederick N. Judson, president.

APPENDIXES.

APPENDIX A. See page 37.

POLYTECHNIC ASSOCIATION (FRANCE).

[Founded in 1830 by the alumni of the Polytechnic School, its public utility being recognized by decree of June 30, 1869.]

1878—1879.

Medal of merit at the Universal Exposition at Vienna, 1873; Silver medal, Brussels Exposition, 1877; Gold medal at the Universal Exposition at Paris, 1878.

GRATUITOUS AND PUBLIC COURSES OF INSTRUCTION.

[Taught gratuitously, for workingmen.]

SECTION OF THE HÔTEL-DE-VILLE.

[Municipal Administration Building, fourth arrondissement (rue de Rivoli and Place Baudoyer), entrance in the court, staircase B, large hall, third story.]

M. JEAN WAGNER, *delegate of the section.*

Opening of the courses on Monday, November 11, 1878.

French. (*First and second years.*) Sunday at 3 p. m. M. J.-R. SAINT MARTIN, *professor*.
Grammar and literature.

Applied mathematics. Wednesday at 8 p. m. M. L. HENRY, *professor*.

Plane geometry. Wednesday from 9 to 9.45 p. m. M. L. HENRY, *professor*.

Geometry of space. Wednesday from 9.45 to 10.30 p. m. M. L. HENRY, *professor*.

Algebra and descriptive geometry. Monday at 9 p. m. M. G. LEDRU DE BIANZAT, *professor*.

Organic chemistry. Saturday at 8 p. m. M. ÉM. GAUDIN, *professor*.

Natural history. Thursday at 9 p. m. Dr. DELAUNAY, *professor*.

Hygiene. Thursday at 9 p. m. Dr. PICQUÉ, *professor*. The course will be announced later.

Geography. M. LACASSE, *professor*.

Elements of public law. Tuesday at 8 p. m. M. ALBERT MEURGÉ, *professor*.

Law in common life. Tuesday at 8 p. m. M. CH. LECOUFLET, *professor*.

Commercial legislation. Tuesday at 9 p. m. MM. LAHAYE and FLEURY, *professors*.

Tachymetry. Friday at 8 p. m. M. BEHNE, *professor*.

Rapid algebra. Friday at 8 p. m. By the author, M. LAGOUT, *professor*.

Popular astronomy. Monday at 9 p. m. M. FOUQUET, *professor*.

Accounts (commercial, industrial, and financial; book-keeping in the first and second years). Saturday at 9 p. m. M. CARON, *professor*.

Penal law. Friday at 8 p. m. M. JULIEN BRÉGAULT, *professor*.

History of great inventions. (This course will begin about the middle of January.) Friday at 8 p. m. Dr. LEMAIRE, *professor*.

Stenography. First, elementary course. M. BELMONT, *professor*. Second, higher course, M. FONTAINE, *professor*.

Lithography and lithographic drawing. M. BRAULT, *professor*.

The railroad: its history and working. Friday at 7 p. m. M. L. BACLÉ, *professor*.

English. (First and second years.) Sunday at 2 p. m. M. C.-W.-R. NEDDEN, *professor*.

German. (First year.) Thursday at 8 p. m. M. WAGNER, *professor*.

German. (Second year and higher course.) Sunday at 1 p. m. M. WAGNER, *professor*.

Monday.	Tuesday.	Wednesday.	Thursday.
At 8 p. m.—Popular astronomy; penal law. At 9 p. m.—Algebra and descriptive geometry.	At 8 p. m.—Elements of public law; law in common life. At 9 p. m.—Commercial legislation.	At 8 p. m.—Applied mathematics. At 9 p. m.—Plane geometry. From 9.45 p. m. to 10.30 p. m.—Geometry of space.	At 8 p. m.—German (first year). At 9 p. m.—Natural history and hygiene.
Friday.	Saturday.		Sunday.
At 8 p. m.—Tachymetry and rapid algebra. At 9 p. m.—History of great inventions; railroads.	At 8 p. m.—Organic chemistry. At 9 p. m.—Accounts.		At 1 p. m.—English (first year). At 2 p. m.—German (second year) and higher course. At 3 p. m.—French (first and second years.)

The distribution of honorable mentions and medals for the year 1877-78 will take place on the day of the opening of the course.

The formal opening will take place at the Public Hall of the Administration Building November 11. There will be a report and distribution of medals and rewards. Address by M. H. DE LA POMMERAYE.

The courses of the Polytechnic Association are designed for adults; except by special permission of the professors, pupils under 16 years of age will not be admitted.

Ladies are admitted to all the courses.

President of the association:

DUMAS,

Perpetual Secretary of the Academy of Sciences, Member of the French Academy.

Mayor of the fourth arrondissement:

DELPIRE.

For further particulars: Secretary General, J. Gastelier.¹

¹ An exact copy of the program, of which the above is a translation, is printed on large sheets and conspicuously posted in various parts of the district.

APPENDIX B. See page 46.

I. ST. LOUIS NORMAL SCHOOL.

COURSE OF STUDY.

JUNIOR YEAR.

First term. Time: Twenty weeks.	Second term. Time: Twenty weeks.
<i>The art of education.</i> Methods of teaching and review of { Arithmetic, Geography, Grammar and Composition, Reading and Phonetics. Physical education. Teaching exercises. Language { Latin or German. Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling.	<i>The art of education.</i> Methods of teaching and review of { Arithmetic, Geography, Grammar and Composition, Reading. Early education. Teaching exercises. Language { Latin or German. Mental and moral philosophy. Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Visits to school for observation.

SENIOR YEAR.

First term. Time: Twenty weeks.	Second term. Time: Twenty weeks.
<i>The science of education.</i> Methods of object lesson teaching. Physiology and hygiene. Reading. Course of reading. Moral education. Composition. Teaching exercises. Language { Latin or German. Principles of instruction: Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Five weeks as extra teachers, or as substitutes, if necessary.	<i>The science of education.</i> Philosophy of education. Methods of teaching. Discipline and school management. Rules of the school board. History of education (lectures and recitations). Composition. Teaching exercises. Language { Latin or German. Principles of instruction: Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Substituting in place of absent teachers.

All recitations are conducted with special reference to the modes of teaching the branch of study under consideration. Teaching exercises in all studies are required in the fourth and junior classes to be given to the class. The teaching exercises indicated in the middle and senior classes are before the whole school.

II. BOSTON NORMAL SCHOOL.

COURSE OF STUDY.

1. Mental and moral science and logic.
2. Principles of education, school economy; and methods of instruction.
3. Physiology and hygiene.
4. Natural science.
5. Study of language.
6. Elementary studies.
7. Vocal music, drawing, and blackboard illustration.
8. Observation and practice in the training school.
9. Observation and practice in the other public schools.

PROGRAM OF THE OBSERVATION AND PRACTICE IN THE TRAINING AND OTHER BOSTON PUBLIC SCHOOLS.

The practical work in connection with the school room that is done by the pupils of the Boston Normal School may be arranged under the following heads:

I. OBSERVING AND REPORTING.

The normal pupils, accompanied by one of their teachers, visit a class in the training school daily for about a week, witness the regular work of the room twenty or thirty minutes, return and report orally to the teacher accompanying them. This report is merely an orderly statement of what is done and said in the room, the teacher making the statement complete and calling attention to such excellences as she deems best. These visits are made at the same hour on successive days, so that the same lesson is seen each day during the week.

II. TEACHING FOR CRITICISM.

The normal pupils teach classes from the training school, following the regular program of the room from which the children come. A class of about twelve children is taught twenty or thirty minutes daily for about a week, under the direction of one of the normal teachers, the same subject being taught to the same pupils at the same hour. After the teaching, the rest of the hour is devoted to criticisms of the lesson by the normal pupils and their teacher. Special preparation for these lessons is made at another hour.

III. OBSERVING WORK IN THE SCHOOLS.

The normal pupils visit the public schools of the city for one day, one pupil only going to a room. Each pupil reports in writing the forenoon program of the school in which she observes and one lesson of the work of the afternoon. The report of the lesson shows (1) the object of the lesson and (2) the steps by which this object was attained. The facts for the reports are to be gathered from observation.

IV. TEACHING IN THE TRAINING SCHOOL.

The normal pupils, in sections, accompanied by their teachers, visit the training school. One pupil of each section teaches fifteen or twenty minutes, while the others observe. They then return to the normal school, and the rest of the hour is spent in criticising the lesson and in making suggestions in regard to future lessons. This work usually continues about one week, sometimes two.

V. OBSERVING AND TEACHING IN THE PRIMARY SCHOOLS.

The normal pupils spend two weeks in the primary schools of the city. Only one pupil is assigned to a room, and this room is selected by the principal of the district. The normal pupils are under the immediate direction of the regular teachers, and are expected to divide their time about equally between teaching and observing the work of the regular teachers; but during the second week they are usually left alone with the class for a day or two. The normal teachers spend their time in visiting their pupils for the purpose of observation and criticism.

VI. OBSERVING AND TEACHING IN THE GRAMMAR SCHOOLS.

The normal pupils spend two weeks in the grammar schools of the city, and are assigned, occupied, and visited the same as in the primary schools.

APPENDIX C. See page 66.

QUESTIONS FOR EXAMINATION OF THE FIRST CLASS IN THE BOSTON GRAMMAR SCHOOLS, 1845.

WORCESTER'S HISTORY.

1. What is history?
2. What are some of the uses of history?
3. Enumerate some of the sources of history?
4. What nations are among the first mentioned in history?
5. For what were the Egyptians distinguished?
6. For what were the Phœnicians distinguished?
7. Who was the founder of Babylon?
8. Who was the founder of the Persian empire?
9. Who were some of the most distinguished orators and poets of Greece?
10. Who was the founder of Rome?
11. What was the character of the early government of Rome?
12. Can you mention the names of the Roman emperors?
13. Can you give an account of the feudal system?
14. What were the purposes of the Crusades?
15. In what century was the great French Revolution, and who were some of the characters who figured in it?
16. What nation ruled Britain at the commencement of the Christian era?
17. Who were the Saxons, and how came they to invade Britain?
18. What do you understand by the Norman conquest?
19. What was the period of the Commonwealth in England, and who was the most distinguished character in it?
20. About what period did the first colonists come to New England, and what were the supposed motives for their leaving the mother country?
21. How long did they continue subject to the mother country, and what were some of the assigned reasons for throwing off her government?
22. When did the war of the American Revolution commence, and who were the allies of the Americans?
23. When was the present Federal Constitution formed, during or after the war of the revolution, and how many States accepted it at its formation?
24. About what period was the embargo laid by President Jefferson, and non-intercourse substituted for it?
25. About what period did the last war between Great Britain and the United States commence, and what were the causes assigned by the Americans for its declaration?
26. What do you understand by an embargo?

27. How many more members are there now in the Senate of the United States than there were at its first adoption?

28. What was the result of the invasion of Canada by the Americans in the last war?

29. What is chronology?

30. What are the eras most used in chronology?

GEOGRAPHY.

1. Name the principal lakes in North America.

2. Name the principal rivers in North America.

3. Name the rivers running eastward into the Mississippi.

4. Name the rivers running westward into the Mississippi.

5. Name the States which lie upon each bank of the Mississippi, and their capitals.

6. Do the waters of Lake Erie run into Lake Ontario, or the waters of Ontario into Erie?

7. Which is the most elevated above the level of the sea, Lake Superior or Lake Huron?

8. Write down the boundaries of Lake Erie.

9. Quebec is (according to your maps) $4^{\circ} 40'$ north of Boston; Ithaca, in New York, is $5^{\circ} 30'$ west from Boston. Which place is farthest from Boston?

10. What is the general course of the rivers in North and South Carolina?

11. What is the general course of the rivers in Kentucky and Tennessee?

12. What is the cause of the rivers in these four contiguous States running in opposite directions?

13. Which is most accessible, in its interior parts, to ships and to commerce, Europe or Africa?

14. Name the empires of Europe.

15. Name the kingdoms of Europe.

16. Name the republics of Europe.

17. What is the nearest route from England to India, by the Cape of Good Hope or by the Red Sea?

18. What do you understand by the line of perpetual snow?

19. On which range of mountains is the line of perpetual snow most elevated above the ocean, on the Rocky Mountains of North America or on the Cordilleras of Mexico?

20. The city of Mexico is in 20° of north latitude; the city of New Orleans is in 30° of north latitude; which has the warmest climate?

21. Name the rivers, gulfs, oceans, seas, and straits through which a vessel must pass in going from Pittsburgh, in Pennsylvania, to Vienna, in Austria.

22. On which bank of the Ohio is Cincinnati, on the right or left?

23. What are the principal natural and artificial productions of New England?

24. Over what continents and islands does the line of the equator pass?

25. What parts of the globe have the longest days?

26. If a merchant in Moscow dines at 3 o'clock p. m. and a merchant in Boston at 2 o'clock, which dines first?

27. Name the countries which lie around the Mediterranean Sea.

28. What countries lie around the Black Sea?

29. What rivers flow into the Black Sea?

30. Name the principal ports of Russia on the Black Sea, on the White Sea, and on the Gulf of Finland.

31. Draw an outline map of Italy.

WORDS TO BE DEFINED.

(1) Monotony, (2) convocation, (3) bifurcation, (4) panegyric, (5) vicegerent, (6) esplanade, (7) preternatural, (8) forum, (9) evanescence, (10) importunate, (11) in-

fatuated, (12) kirk, (13) connoisseur, (14) dormant, (15) aerial, (16) sphinx, (17) rosemary, (18) thanatopsis, (19) monody, (20) anthology, (21) pother, (22) misnomer, (23) zoönomia, (24) maniacal, (25) hallucination, (26) Machiavelli, (27) madrigals, (28) hades.

GRAMMAR.

1. Parse the following sentence, and write a full account of each word: Withhold not good from them to whom it is due.

2. Parse the following: The wages of sin is death.

3. Write a short sentence, containing an active transitive verb and an objective case.

4. A sentence containing a neuter verb, a relative pronoun, and an adjective in the comparative degree.

5. A sentence with the verb *to comfort*, in the passive voice, potential mode, perfect tense, second person plural.

6. In what cases do we use *a* instead of *an*?

7. What is the difference between an active and a neuter verb?

8. The difference between ordinal and numeral adjectives?

9. What is an allegory?

10. Punctuate the following sentences, correct all the errors you may find in them, and write out grammatically, if you think them to be ungrammatical:

Your brother was there and he said to my sister and i i am tired and must go and lay down to rest me and when he was laying down we tried to lie a vail over his face. I shall come to see you this afternoon unless it rains.

Vain man thou presumest too much neither the lion nor the tiger will bow their necks to thee.

To be or not to be that is the question.

The propriety of such rules are doubtful.

NATURAL PHILOSOPHY.

1. What is the difference between natural history and natural philosophy?

2. What is the difference between zoölogy and geology?

3. Define the attraction of gravitation, attraction of cohesion, and chemical attraction or affinity.

4. What do you understand by the centre of gravity in a body?

5. Define momentum.

6. What is the reason that when a coach in motion is suddenly stopped the passengers are thrown forward?

7. What is the rate of velocity of falling bodies?

8. How much farther will a body fall in ten seconds than in five?

9. What is the reason that you can cut a piece of pasteboard or hard substance more easily by holding it close up to the rivet of a pair of scissors than by holding it near the ends of the blades?

10. Why is it that when you skip a stone over the surface of water it does not sink the first time it strikes the water, since it is heavier than the water?

11. Which could you stop most easily, a railroad car weighing a ton going at the rate of 10 miles an hour, or a car weighing 100 tons creeping along at the rate of $\frac{1}{2}$ of a mile an hour?

12. Explain the hydrostatic press.

13. What is specific gravity?

14. How high can you raise water in a common pump with a single box?

15. How high can you raise quicksilver by the same contrivance?

16. In building a cistern should it be made stronger at the top or at the bottom? Why?

17. If a grindstone should be suddenly split in pieces while whirling rapidly around would the fragments fall directly to the ground or not? Explain the principle.

18. Is a stage coach with baggage upon the top more liable to be upset than the same coach with the baggage hung under the axletree? If so, why?

19. In a small boat which is in danger of being upset should the passengers stand up or lie down in the bottom? Why?

20. Which occupies the most space, a pound of water when liquid or when in the state of ice?

ASTRONOMY.

1. What is the radius of a circle?
2. What is the arc of a circle?
3. How many degrees are there in the quarter of a circle?
4. Which circle contains the greater number of degrees, the Equator or Arctic circle?
5. What do you understand by the terms zenith and nadir?
6. What is the horizon?
7. What is the axis of the horizon?
8. What is a vertical circle?
9. What is the altitude of a heavenly body?
10. What is the azimuth of a heavenly body?
11. Has the earth the greatest velocity in the rotation upon its axis or the revolution around the sun?
12. In the diurnal revolution of the earth, who are now moving with the greatest velocity, the inhabitants of Mexico or of Boston?
13. What difference will there be in the velocity with which the inhabitants of the above named cities are moved in the annual revolution of the earth around the sun?
14. Suppose one man is on the top of a mountain, another at its foot, and a third in a deep cavern, all on the same parallel of latitude, which will pass through the greatest space in one revolution of the earth upon its axis?
15. Which moves with the least velocity?
16. At what angle is the axis of the earth inclined to the plane of its orbit?
17. Suppose the angle of the earth were perpendicular to the plane of its orbit, what effect would it have upon the order of the seasons?
18. Explain the causes of the change of seasons.
19. How many times does the moon revolve around the earth in one year?
20. How often does the moon revolve upon her axis?
21. Why is it that we see only one side of the moon?
22. What causes an eclipse of the moon?
23. What causes an eclipse of the sun?
24. How many primary planets are there in our solar system?
25. How many secondary planets?
26. How many satellites has Jupiter?
27. How many satellites has the earth?
28. Which way does the earth move around the sun, from east to west or from west to east?
29. What is the principal cause of the tides?
30. What do you understand by neap tides?
31. What do you understand by the transit of a planet?

ARITHMETIC.

1. How much is $\frac{1}{4}$ of $\frac{1}{2}$ of 9 hours and 18 minutes?
2. What part of 100 acres is 63 acres, 2 roods, and 7 rods?
3. What is the quotient of one ten-thousandth divided by ten thousand? Express the answer in decimal and vulgar fractions.

4. A stationer sold quills at 10s. 6d. per thousand, by which he cleared $\frac{1}{4}$ of the price, but the quills growing scarce he raised the price to 12s. per thousand. What per cent. would he clear by the latter price?

5. Suppose A owes me \$100 due at the end of 3 months and \$100 due at the end of 9 months, and he agrees to give me a note for \$200 payable at such a time that its present worth shall be the same as the sum of the present value of the two first mentioned notes. How long after date must this note be made payable?

6. A man has a square piece of ground which contains one-quarter of an acre and a quarter, on which are trees which will make wood enough to form a pile around on the inside of the bounds of the land 3 feet high and 4 feet wide. How many cords of wood are there?

7. A sold goods for \$1,500, to be paid for one-half in 6 months and one-half in 9 months. What is the present worth of the goods, interest being at 7 per cent.?

8. A merchant in New York, where interest is 7 per cent., gives his note, dated at Boston, where the interest is 6 per cent., for \$5,000, payable at the Merchants' Bank, Boston, on demand. Thirty days after the date of the note, demand is made. A year after demand, \$200 are paid on the note. What sum remains due at the end of 2 years from the date of the note?

9. What is the square root of $\frac{1}{4}$ of $\frac{1}{4}$ of $\frac{1}{4}$ of $\frac{1}{4}$?

10. The city of Boston has 120,000 inhabitants, half males, and its property liable to taxation is \$100,000,000. It levies a poll tax of $\frac{1}{4}$ of a dollar each on one-half of its male population. It taxes income to the amount of \$50,000, and its whole tax is \$770,000. What should a man pay whose taxable property amounts to \$100,000?

APPENDIX D. See page 77.

MOLINE (ILL.) PUBLIC SCHOOLS.

PLAN OF SECOND ANNUAL INDUSTRIAL EXHIBIT AND RULES GOVERNING THE SAME,
TO BE HELD AT SKATING RINK, MARCH 28, 1885.

LIST OF PREMIUMS.

CLASS A.—*Models of machines, implements, and other mechanical contrivances.*

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	\$3 00	First prize	\$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

CLASS B.—*Articles other than models the value of which shall depend upon their utility.*

(1) Articles of furniture:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	\$3 00	First prize	\$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(2) Articles of clothing:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	\$3 00	First prize	\$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(3) Miscellaneous useful articles:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	\$3 00	First prize	\$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

CLASS C.—*Articles of food.*

(1) Bread:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$3 00	First prize.....	\$2 00
Second prize.....	2 00	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

(2) Cakes:

I. Pupils over 12 years:		II. Pupils under 12 years:	
Best cake.....	\$2 00	Best cake.....	\$1 00

(3) Pastry.

I. Pupils over 12 years:		II. Pupils under 12 years:	
Best specimen pastry.....	\$2 00	Best specimen pastry.....	\$1 00

CLASS D.—*Ornamental articles, whose chief value shall depend upon the artistic skill displayed in their production.*

(1) Lace and artistic needlework.

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$3 00	First prize.....	\$2 00
Second prize.....	2 00	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

(2) Scroll sawing and wood carving:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$3 00	First prize.....	\$2 00
Second prize.....	2 00	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

(3) Miscellaneous ornamental articles:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$3 00	First prize.....	\$2 00
Second prize.....	2 00	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

CLASS E.—*Drawing.*

(1) Freehand copy without measurements, of an outline drawing placed before the pupils:

I. Pupils of 3d, 4th, and 5th grades:		II. Pupils of 6th, 7th, and 8th grades:	
First prize.....	\$2 00	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

III. Pupils of high school:

First prize.....	\$2 00
Second prize.....	1 50
Third prize.....	1 00

(2) Original design in black and white for wall paper, carpet, oil cloth, centre piece, border, &c., the conventionalized unit or units to be furnished pupils:

I. Pupils of 3d, 4th, and 5th grades:		II. Pupils of 6th, 7th, and 8th grades:	
First prize.....	\$2 00	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

III. Pupils of high school:

First prize.....	\$2 00
Second prize.....	1 50
Third prize.....	1 00

(3) Drawing an object placed before the pupils:

I. Pupils of 6th, 7th, and 8th grades:		II. Pupils of high school:	
First prize.....	\$2 00	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

(4) Working drawings:

I. Pupils of 6th, 7th, and 8th grades:		II. Pupils of high school:	
First prize.....	\$2 00	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 50
Third prize.....	1 00	Third prize.....	1 00

CLASS F.—*Practical carpentry.*

Best specimen of mitring.....	\$2 00
Best specimen of dovetailing.....	2 00
Best specimen of mortise and tenon.....	2 00

CLASS G.—*Plain hand sewing.*

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$2 50	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 00

CLASS H.—*Toys.*

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize.....	\$2 50	First prize.....	\$2 00
Second prize.....	1 50	Second prize.....	1 00

CLASS I.—*Paintings and crayon work.*

1. Paintings or crayon drawings:	
First prize.....	\$2 50
Second prize.....	1 50
2. Decoration in oil or water colors of plaques, panels, fabrics, &c.:	
First prize.....	\$2 50
Second prize.....	1 50

CLASS K.—*Pupils of first and second primaries.*

Best useful article.....	\$1 50
Best ornamental article.....	1 50

RULES GOVERNING THE COMPETITION.

(1) All pupils competing for the above prizes must be members of the school at the time of competition.

(2) No pupil shall make more than one entry in any class or subclass, excepting Class F. Pupils shall be eligible to only one prize in this class.

(3) All articles must be completed and entered on or before Monday, March 23.

(4) All articles entered for competition must be commenced and completed between date of this notice and date of entry.

(5) Each article when entered must bear a label showing the pupil's name, age, and room in school; also the class and subclass in which the entry is made.

(6) No article will be accepted whose construction does not represent the pupil's own unaided effort. (This rule shall not be construed to prevent pupils from obtaining all necessary advice and information before the actual commencement of the work.)

(7) Each pupil who hands in an article for the exhibit will be required to sign the following certificate:

I hereby certify that this ——— has been made by me since the announcement of the exhibit, December 19, and that no assistance has been given me since its commencement.

(8) The drawings of Class E must be made in school during the drawing hour.

(9) As early as the third week of the winter term pupils shall inform their teachers for what prize or prizes they intend to compete.

(10) Teachers shall make every effort to insure a proper understanding of and compliance with these rules on the part of pupils.

(11) Teachers shall take every precaution to prevent interference of this work with the pupil's regular school duties.

SPECIAL PRIZES.

Special prizes will be given by different citizens and firms of the city for some of the best products in the classes enumerated.

These prizes, with the names of those offering them, will be printed on a separate circular, which will be given to pupils at the beginning of the winter term.

APPENDIX E. See page 179.

DECORATION OF THE ASSEMBLY HALL, GIRLS' HIGH SCHOOL, BOSTON.

LIST OF CASTS, WITH COST OF EACH.

Subject.	Original cost in gold.	Expense of importation.	Total cost.
Frieze of Parthenon, British Museum.....	\$336 62	\$449 81	\$786 43
Caryatid, southern portico of Erechtheum.....	30 00	39 34	69 34
Diana of Gabii, Louvre.....	24 00	41 50	65 50
Venus of Milo, Louvre.....			
Polyhymnia, Louvre.....	24 00	41 50	65 50
Pudicitia, Vatican.....	37 60	104 12	141 72
Amazon, Capitoline Museum.....	40 00	53 20	93 20
Genius of the Vatican.....	5 60	18 29	23 29
Psyche, Naples Museum.....	1 60	2 50	4 10
Demosthenes, Vatican.....	32 20	88 22	120 42
Bone player, Berlin Museum.....	8 00	15 85	23 85
Apollo (archaic), British Museum. <i>Bust</i>	2 50	3 30	5 80
Apollo (Pourtales), British Museum. <i>Bust</i>	5 00	6 23	11 23
Zeus Trophonius, Louvre. <i>Bust</i>	96	1 60	2 56
Jupiter Otricoli, Vatican. <i>Bust</i>	5 00	15 21	20 21
Juno, Villa Ludovisi, Rome. <i>Bust</i>	8 00	27 08	35 08
Pallas, Louvre. <i>Bust</i>	4 00	7 85	11 85
Bacchus (Young), Capitoline. <i>Bust</i>			
Æsculapius, British Museum. <i>Bust</i>	5 00	6 23	11 23
Homer, Capitoline. <i>Bust</i>	2 40	10 41	12 81
Pericles, Vatican. <i>Bust</i>	2 40	9 66	12 06
Augustus (Young), Vatican. <i>Bust</i>	1 60	7 30	8 90

"Expense of importation" includes premium on original cost, packing, shipping, freight, insurance, wharfage, delivery, unpacking, and repairs.

The casts were purchased as follows:

Nos. 1, 2, 12, 13, 19, from D. Brucciani, 40 Russell street, Covent Garden, London.

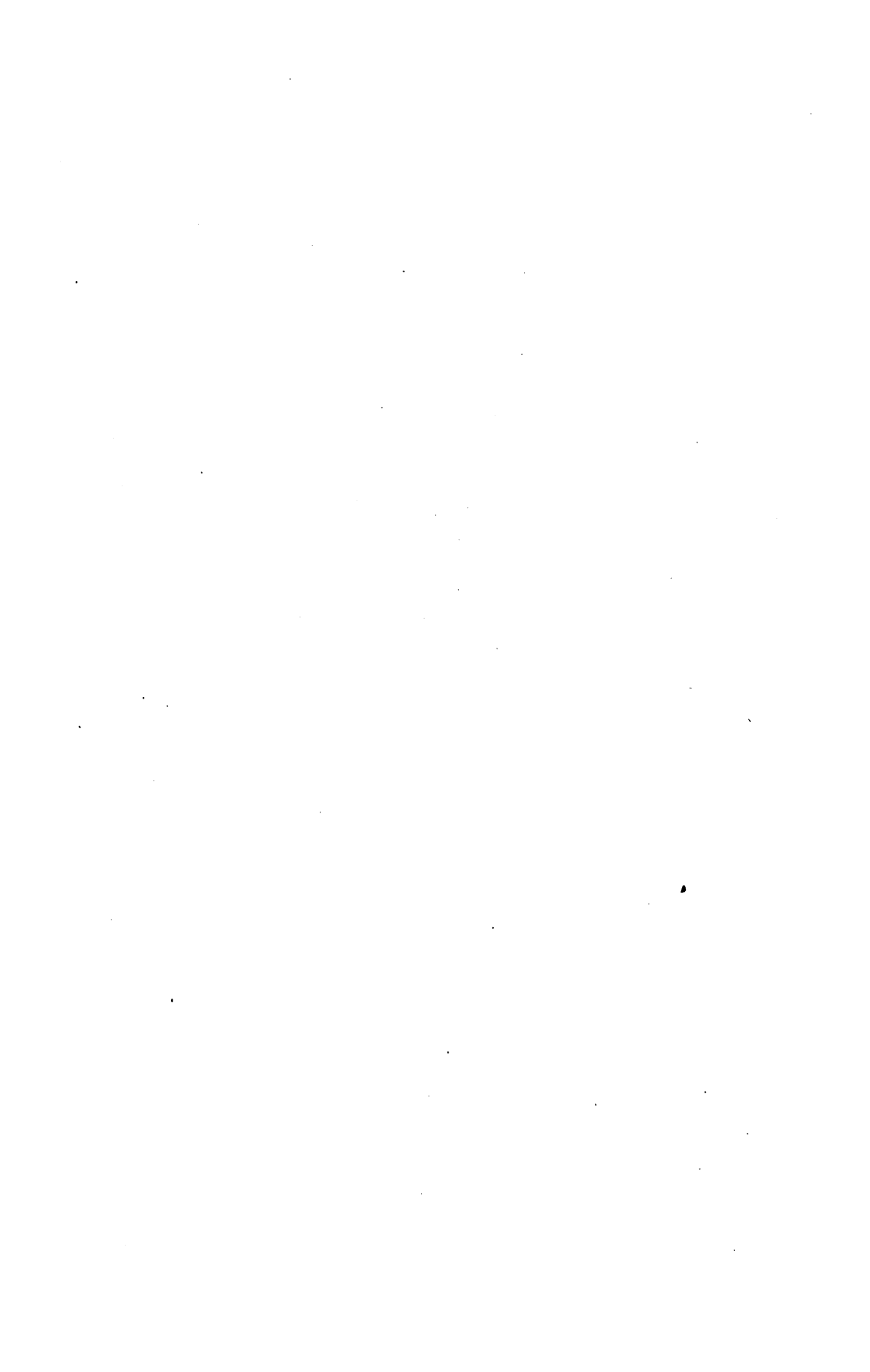
Nos. 3, 5, 7, 9, 11, 14, 17, 22, from Bureau du Moulage, Palais du Louvre, Paris.

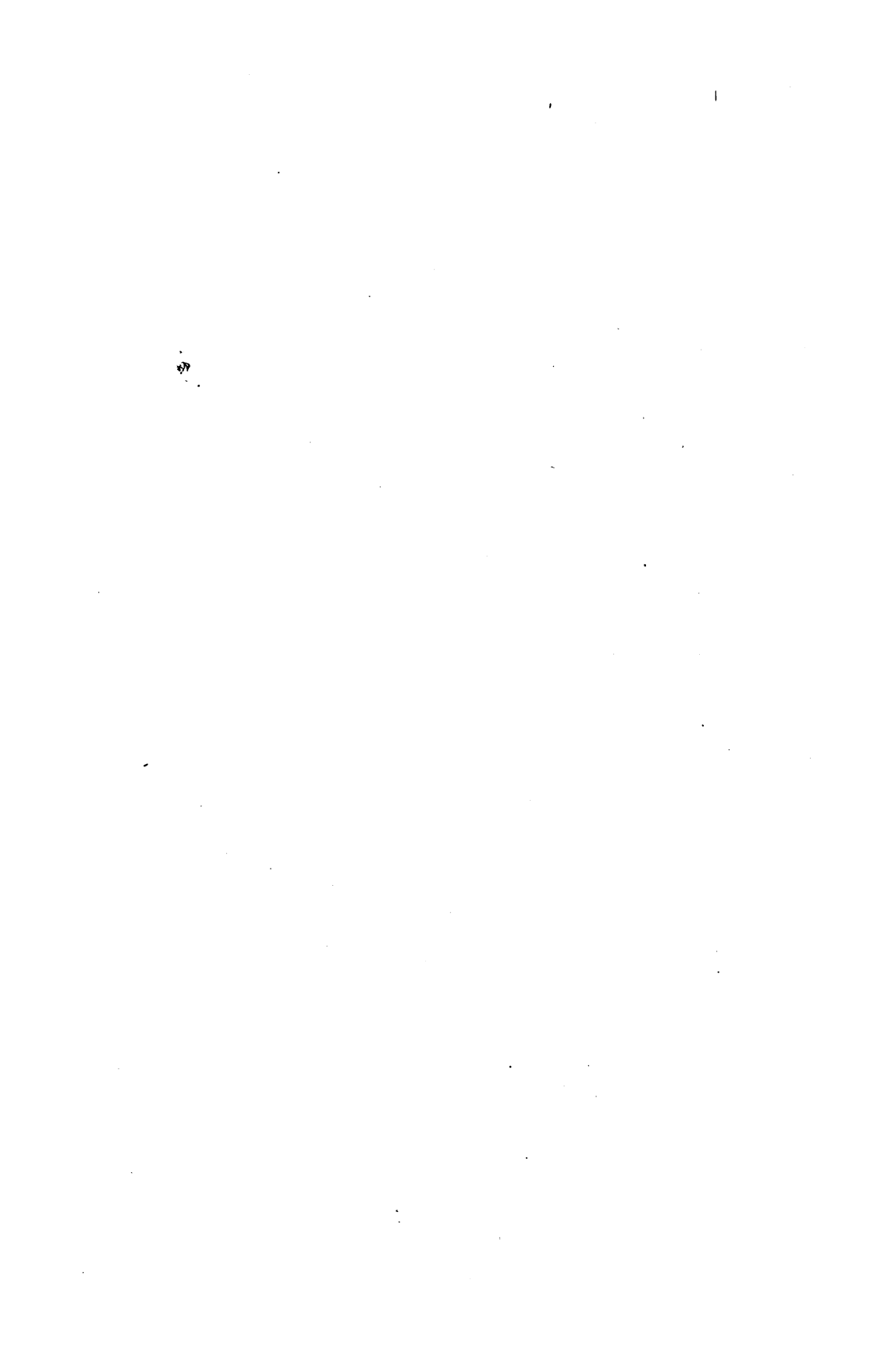
Nos. 6, 8, 10, 15, 16, 20, 21, from L. Malpieri & G. Condiotti, Rome. (To be addressed through United States consul or banker.)

Nos. 4 and 18, from Paul A. Garey, 6 Province House Court, Boston.











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the Library on or before the last date
stamped below.

A fine of five cents a day is incurred
by retaining it beyond the specified
time.

Please return promptly.

~~DEC 28 1931~~

